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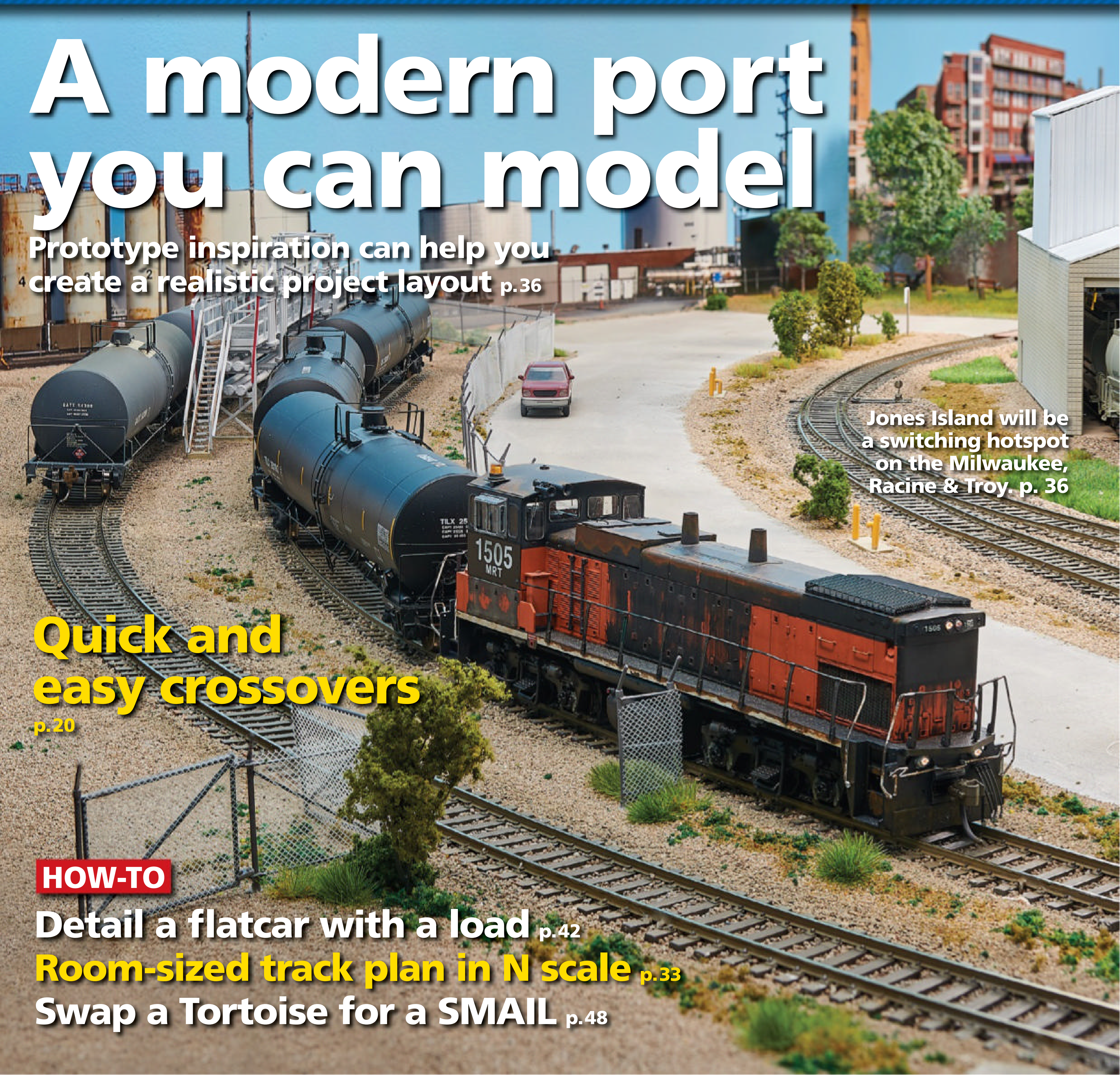

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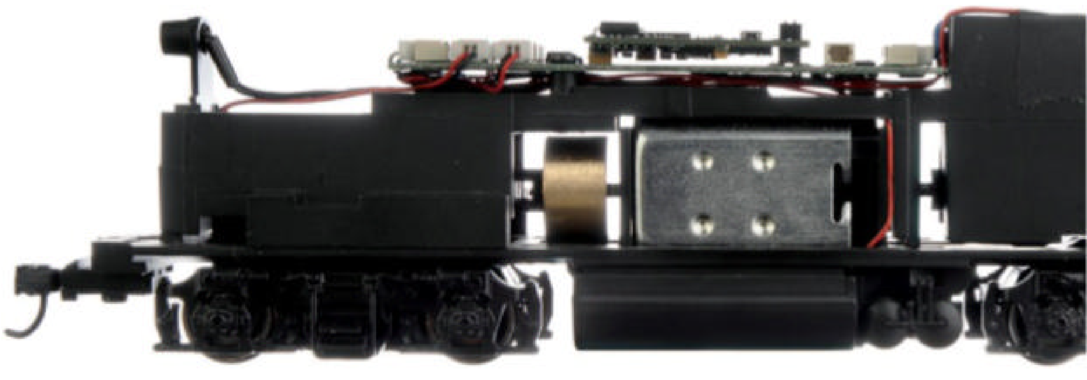

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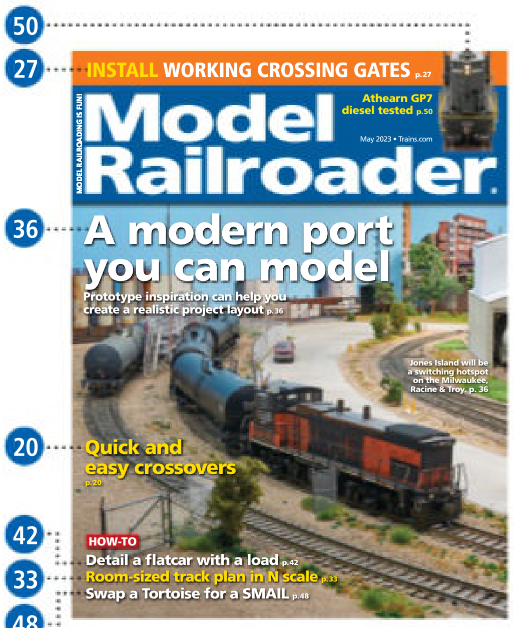
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On the cover: The *Model Railroader* staff unveils the newest addition to the HO MR&T, Jones Island. Photo by Connor Bruesewitz/Saturn Lounge

Next issue

In June, see how Jim Ferenc built an animated HO scale coal mine. Plus, visit two spectacular layouts, scratchbuild an N scale critter, model forest undergrowth, and more!

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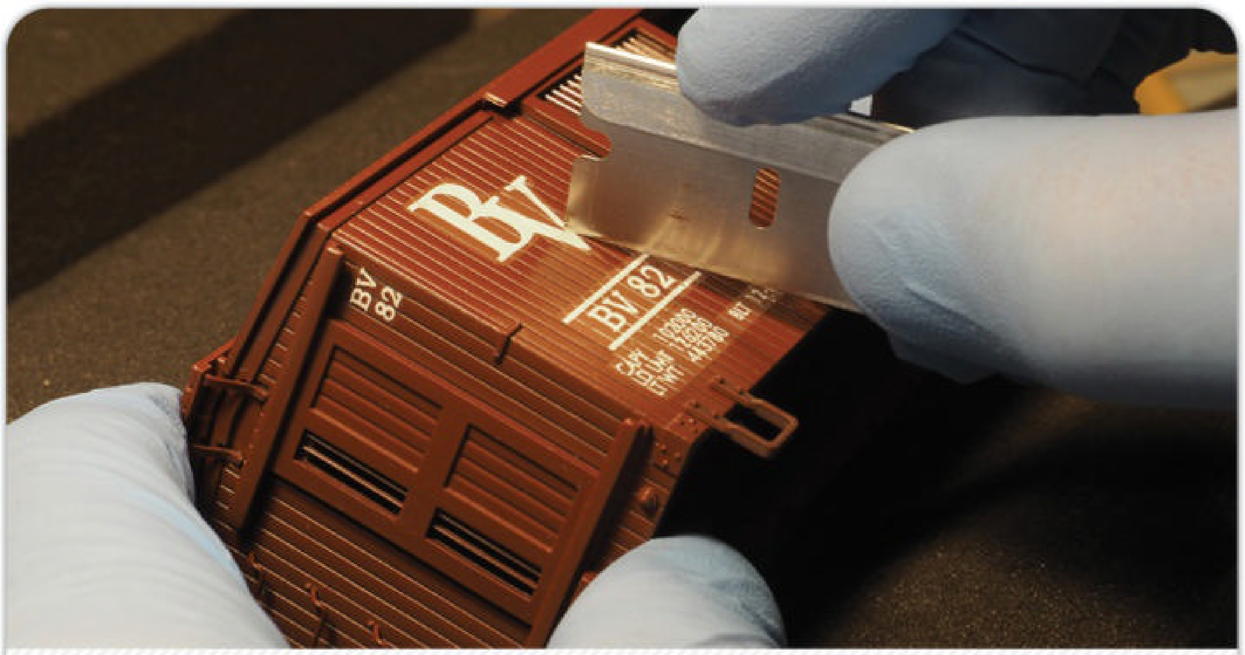

The Car Swap Project series

Trains.com Director David Popp recruits frequent *Model Railroader* contributors and veteran modelers Gerry Leone and Seth Puffer for a can't-miss nine-part series of articles about the creation of custom-painted freight cars appropriate for each other's model railroads, touching upon topics such as stripping lettering from plastic models, printing decals with an ALPS printer, liquid rust application, and much more.

Spaces to Places III: Making a highway, part 4

With work on the highway underpass drawing to a close, host Gerry Leone shares techniques for blending his backdrop into the scenery. Decorating the countryside setting with a variety of ground cover, strategically placed trees, and signature roadside details transforms this model railroad space into a plausible place!

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By Eric White

Who is your tribe?

Who is your tribe? Who do you do your model railroading or railfanning with? Do you have one group for everything, or are you a member of several?

Of course, my first model railroading tribe is the people here at Kalmbach. We're always talking trains here one way or another. Carl is taking care of the modern prototype guys, leading *Trains* Magazine and its coverage of the industry. Brian has the classics covered at *Classic Trains*. He's my go-to guy for vintage prototype photos.

Hal gets everyone's attention when a new 3-rail locomotive comes into the *Classic Toy Trains* office with its smoke effects and loud bells and whistles.

Cody's office has been my hobby shop window for the past nine years. Bryson has the pulse of modern railroading. Steve's love of the esoteric keeps everyone entertained, and Mitch has become our go-to guy for railroad movies.

Outside the office, there are a few groups as well. I've been helping rebuild John Lehnen's nearby Chicago & North Western layout as part of his crew. As I write this, I'm thinking of the fun I had operating with the RailGroup guys in the Chicago area and looking forward to Bay Rails in late March.

Then there's the Friday lunch crew. Retired managing editor Jim Kelly, longtime operator Gordy Spiering (who was always at Andy Sperandeo's side when a yard needed to be sorted), plus contributors like Steve Miazga and local NMRA officers such as Dennis Janssen and retired railroader Paul Hanson keep me informed of what's going on in the area.

All of these people help make my model railroading life richer and more fulfilling. They know stuff I've never thought about, and had experiences I never have.

Besides the social benefits of having a group to enjoy your hobby with, these guys also know how to do things I don't. When I need to know how to tackle a project, sharing what I'm doing always results in ideas and methods I hadn't thought of, or maybe didn't know about.

And in some cases, I can find someone who enjoys doing things I'd rather avoid. Whether it's holding up the other end of an L-girder while I attach the legs or helping find an elusive short circuit, two heads (or four hands) are better than just relying on what we bring to the situation.

Of course, not everyone is as social as the next guy, but even the lone-wolf guys have some sort of social system, even if it's behind the

computer monitor on a forum that meets their interests.

And finally, we're all part of the *Model Railroader* tribe by reading and contributing to this magazine. If you've ever wanted to share what you're doing, check the box below for our contact info. We can't do it alone, no matter who we are, and we're glad you're here to join us.

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Model railroading is fun!

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HO scale

Electro-Motive Division SD45 diesel locomotives. These WalthersProto six-axle diesels come decorated for Great Northern (Omaha Orange and Pullman Green); Penn Central (black); Milwaukee Road (orange and black); Norfolk & Western (black, high short hood); Southern Ry. ("tuxedo" scheme, high short hood); and Wisconsin Central (maroon and yellow). Each paint scheme is available in four road numbers (two each in DC and DCC). The HO scale SD45s feature railroad-specific details such as antennas, air horns, and trucks. Additional features include factory-painted and installed crew figures and Proto-Max metal couplers. Direct-current models sell for $219.98. Models with an ESU LokSound 5 sound decoder are $319.98. Wm. K. Walthers Inc., 414-527-0770, walthers.com

New HO covered hopper from Walthers

Wm. K. Walthers Inc. recently announced a newly tooled three-bay covered hopper will be joining its HO scale Mainline series. The model is due out this summer.

The Trinity 4,750-cubic-foot capacity three-bay covered hopper is based on a prototype introduced in 1990. Thousands of these cars can be seen in service all over North America today. Used heavily in the grain industry, these cars haul multiple kinds of products that require protection from the elements. The WalthersMainline car has a Clerestory-style roof with 1990s-era square cornered roof hatches. The covered hopper features detailed hopper gates with vibrator brackets and outlets. It rides on 100-ton trucks with 36" RP-25 contoured metal wheels. Body-mounted Proto-Max metal knuckle couplers round out the car.

The covered hopper is available painted for Burlington Northern, Burlington Northern Santa Fe, CSX, Illinois Central Gulf, Kansas City Southern, Family Lines System, and Missouri-Kansas-Texas. Each paint scheme is offered with four road numbers. Each car is priced at $34.98.

For the latest updates on the Trinity 4750 three-bay covered hopper project, visit walthers.com.

An HO scale Trinity 4,750-cubic-foot-capacity three-bay covered hopper will be joining the WalthersMainline series. The car will be offered in seven paint schemes.

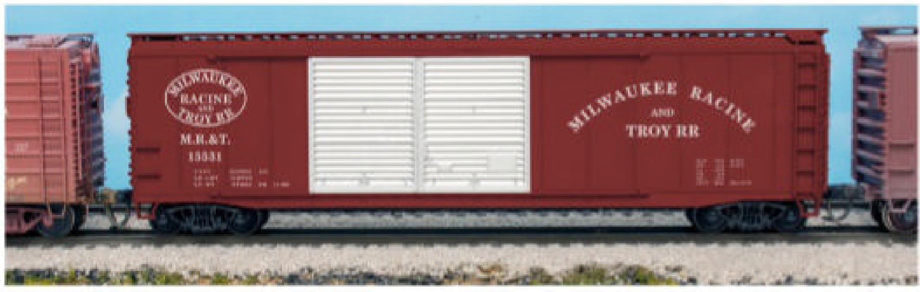
New Milwaukee, Racine & Troy HO scale kits

The Kalmbach Hobby Store website is now populated with upcoming Milwaukee, Racine & Troy models for your layout. Offered are a 41-foot gondola and 40-foot single-sheathed boxcar with vintage heralds and a 50-foot double-door boxcar. The limited-run cars are being produced for the Kalmbach Hobby Store by Accurail Inc.

The 50-foot double-door boxcar (era: November 1966+) uses Accurail's 5200-series tooling and features the MR&T's oval herald. The brown one-piece riveted-side body also includes a factory-installed brake wheel and running board casting. The grab irons and full-height ladders are all molded.

Modeler-installed detail parts include the doors, door straps, and brake system. The underbody features molded center sills, crossmembers and laterals, and draft-gear box covers. Plastic solid-bearing trucks, Delrin engineering plastic wheelsets, and Accumate couplers round out this model.

All of the upcoming MR&T HO scale freight car kits are available for preorder. Quantities are limited, so don't miss out. Learn more at KalmbachHobbyStore.com.



The HO scale Milwaukee, Racine & Troy 50-foot double-door boxcar kit is expected to ship in July. Photo illustration by Lori Arndt

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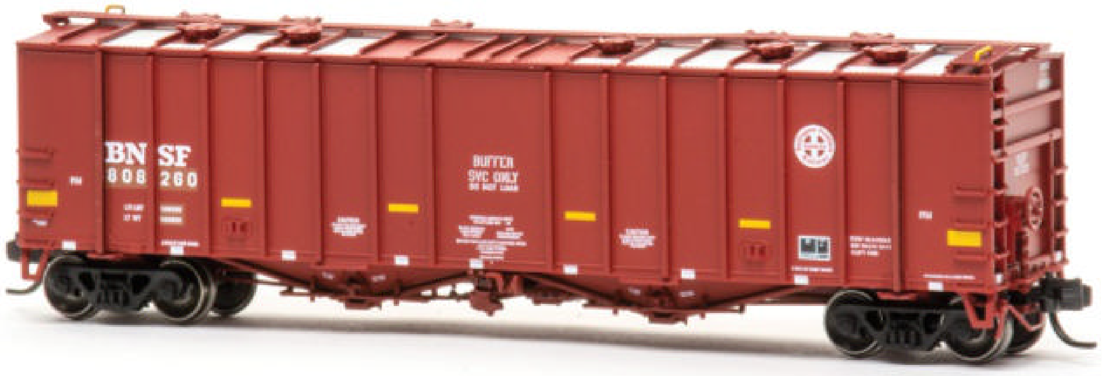
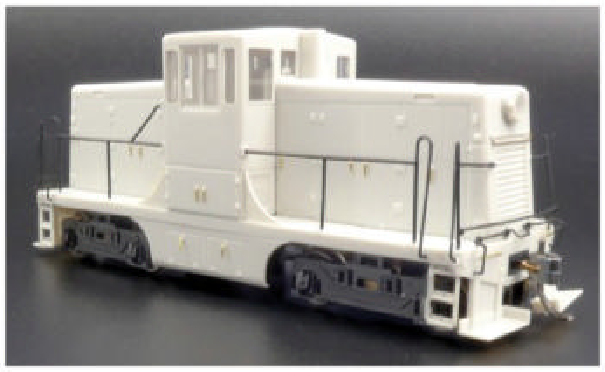
N scale

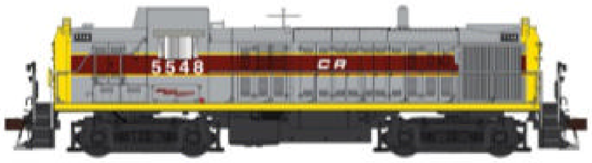


General American 4,180-cubic-foot capacity Airslide covered hopper. This N scale hopper is available lettered for BNSF Ry. (Oxide Red buffer service); Brach's Candy (gray); Burlington Northern (Cascade Green); Chessie System (yellow with C&O reporting marks); Golden West Service (blue); St. Louis-San Francisco (Frisco, gray in three road numbers); St. Louis Southwestern (gray); and Western Maryland (gray). Each paint scheme is offered in two numbers unless noted. The model has a newly tooled injection molded plastic body; separate, factory-applied etched-metal running boards, brake wheel, and uncoupling levers. Each car is priced at $36.95. Atlas Model Railroad Co., 908-678-0880, shop.atlasrr.com

HO scale locomotives

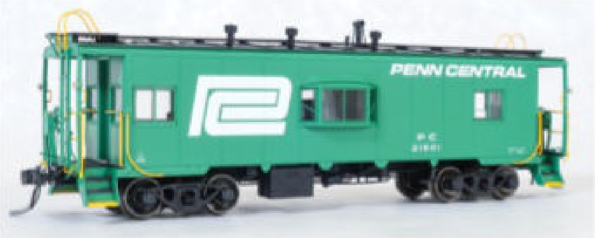


- **General Electric 44-ton diesel.** Atchison, Topeka & Santa Fe; Boston & Maine; Canadian National; Denver & Rio Grande Western; Milwaukee Road; New York, New Haven & Hartford; New York, Ontario & Western; Northern Pacific; Pennsylvania RR; Southern Pacific; Southern Ry.; and Union Pacific. One to three road numbers per scheme. Also available painted (red, blue, and yellow) and undecorated. Multiple phases and detail variations. Die-cast metal chassis and fuel tank with two styles of fuel tank skirting. Direct-current model with NEXT-18 decoder socket and speakers, $189.95; with ESU sound decoder, $299.95. Rapido Trains Inc., 905-474-3314, rapidotrains.com



- **Alco RS3 Hammerhead, Phase I, and Phase II diesel locomotives.** Conrail; Central of Georgia; Chicago & North Western; Denver & Rio Grande Western; Erie; Erie Lackawanna; Jersey Central; Reading Co.; Seaboard Air Line; Seaboard Coast Line; and Western Maryland. Two to three road numbers per scheme. Factory-applied air hoses, windshield wipers, and grab irons. Light-emitting diode headlight and ditch lights as appropriate. Direct-current model, $219.95; with ESU LokSound 5 sound decoder, $319.95. Add $30 for hammer-head. Bowser Manufacturing Co. Inc., 570-368-2379, bowser-trains.com

HO scale freight cars



- **Despatch Shops Inc. and St. Louis Car Co. bay-window caboose.** Penn Central; Boston & Albany; Conrail; Illinois Terminal; New York Central; and Norfolk & Western. Multiple road numbers per scheme. Also available undecorated. Three body variations. Prototype-specific running boards, body details, roof equipment, and ladder roof hand holds. Light-emitting diode lighting including marker and interior lights. Full railroad-specific interior and underbody details. New 70-ton Gould plain-bearing trucks. Tangent Scale Models, 828-412-3886, tangentscalemodels.com

In Memoriam

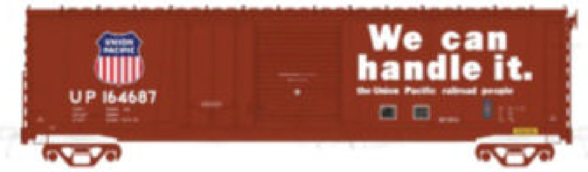
Charles Vlk, 1945-2023

Mike Skibbe photo

Charles Vlk, 78, died of cancer on February 6, 2023. An influential model railroader, Charles was heavily involved in the hobby and industry. He held positions at Kato USA and Con-Cor, as well as Des Plaines Hobbies. As an avid Chicago, Burlington & Quincy modeler, he influenced several items produced by those companies, such as the Kato CB&Q business car.

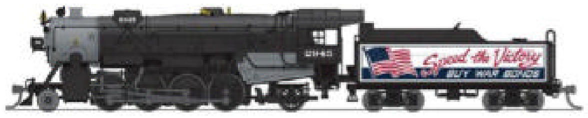
While living in the Chicago area, Charlie helped start an NTrak model railroad club. After moving to Tennessee, he joined a live steam group. With an educational background in architecture, Charlie designed BraNch-Trak. This single track, code 55 module system was similar to Ntrak but eliminated the quirks that his group of friends found frustrating. BraNch-Trak eventually led to the Modutrak N scale concept.

Friends remember Charlie, a self-acknowledged introvert, as friendly, witty, talented, and lovable as they come. He is survived by his wife, Barbara, children Jennifer and Michael (Lara), and three grandchildren.

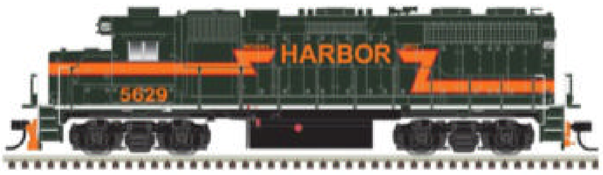


- **Union Pacific Omaha Shops 50-foot combination-door boxcar.** Union Pacific (classes BC-50-5 and BC-50-6 in multiple paint schemes). One to five road numbers per scheme. Also available as an undecorated kit (both classes). Car-specific handbrakes and lettering placement. Multiple versions of door stops and grab irons. Factory-applied rubber air hoses and metal corner stirrups. 50-ton trucks with metal wheelsets. Moloco Trains, molocotrains.com

N scale locomotives

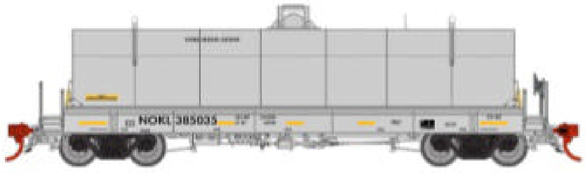


- **United States Railroad Administration Light and Heavy Mikados.** Heavy: War Bonds Billboard; Atchison, Topeka & Santa Fe; Great Northern; Kansas City Southern; Milwaukee Road; Spokane, Portland & Seattle; and Virginian Ry. Light: Atlantic Coast Line; Chicago & Illinois Midland; Chicago & North Western; Duluth, Missabe & Iron Range; New York Central; Pennsylvania RR; Southern Ry.; Union Pacific; and War Bonds Billboard. Both available undecorated. One or two road numbers per scheme. Die-cast metal chassis. Factory-applied handrails, grab irons, and piping. Light-emitting diode headlight and tender light. Paragon4 dual-mode sound decoder. $369.99. Broadway Limited Imports, 386-673-8900, broadway-limited.com



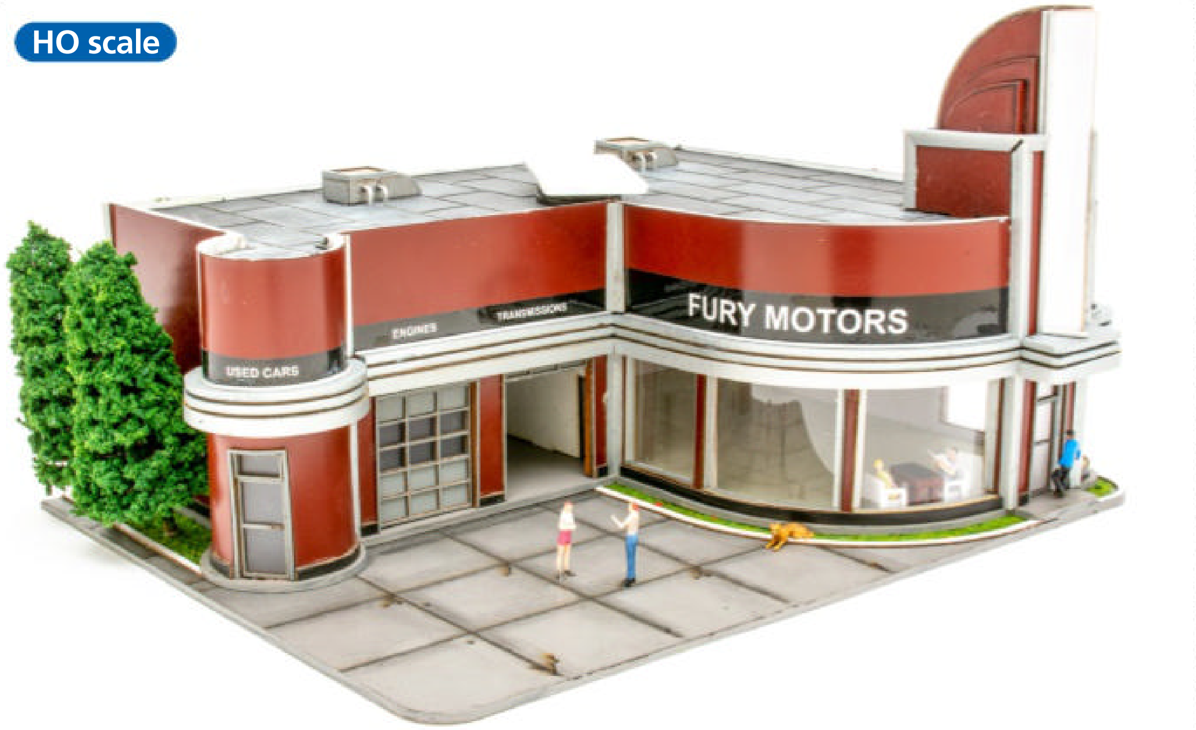
- **Electro-Motive Division GP38 diesel locomotive.** Indiana Harbor Belt; Central Maine & Quebec; Chicago & North Western; Conrail; First Union; Norfolk & Western; Providence & Worcester; Rock Island Rail; and Southern Ry. Also available undecorated. Multiple road numbers per scheme. Low or high short hood as appropriate. Directional golden-white light-emitting diode headlights, walkway safety tread, railroad-specific dynamic brakes, and Accumate couplers. Direct-current model with speaker, $149.95; with dual-mode ESU LokSound sound decoder, $259.95. Atlas Model Railroad Co., 908-687-0880, shop.atlasrr.com

N scale freight cars



- **FreightCar America VersaCoil.** Northwestern Oklahoma RR; Canadian Pacific; Mitsui Rail Corp., and Norfolk Southern. Three road numbers and one three-pack per scheme. Phase 1 or 2 body and removable hoods as appropriate. Injection-molded plastic body, screw-mounted 100-ton roller bearing trucks, and body-mounted McHenry lower shelf knuckle couplers. Single car, $44.99; three-pack, $124.99. Athearn Trains, 800-338-4639, athearn.com

HO scale



Fury Motors. The HO scale Art Deco-style building features light-emitting diode lighting and a backlit sign with interchangeable decals. The lighted showroom includes and access panel to add your own cars. A rotating platform on the roof is sized for an HO scale vehicle. Fury Motors includes five figures, tables, chairs, roof vents, and Jack the German Shepard. Lighting for the assembled limited-edition building ($69.99) requires a 4.5-volt power source. Menards Inc., menards.com

S scale freight cars

- **Two-bay fish-belly hopper with peaked ends.** Western Maryland; Atlantic Coast Line; Chesapeake & Ohio; Lehigh Valley; Norfolk & Western; and Reading Co. Multiple road numbers per scheme. Also available undecorated. Detailed injection-molded plastic body; factory-applied handbrake wheel, metal handrails, and grab irons; detailed brake system; and sprung, die-cast metal trucks. Equipped with American Flyer-compatible metal wheels and operating couplers. Code 100 metal wheelsets and Kadee-compatible scale couplers included. $54.99. ScaleTrains, 844-987-2467, scaletrains.com MR

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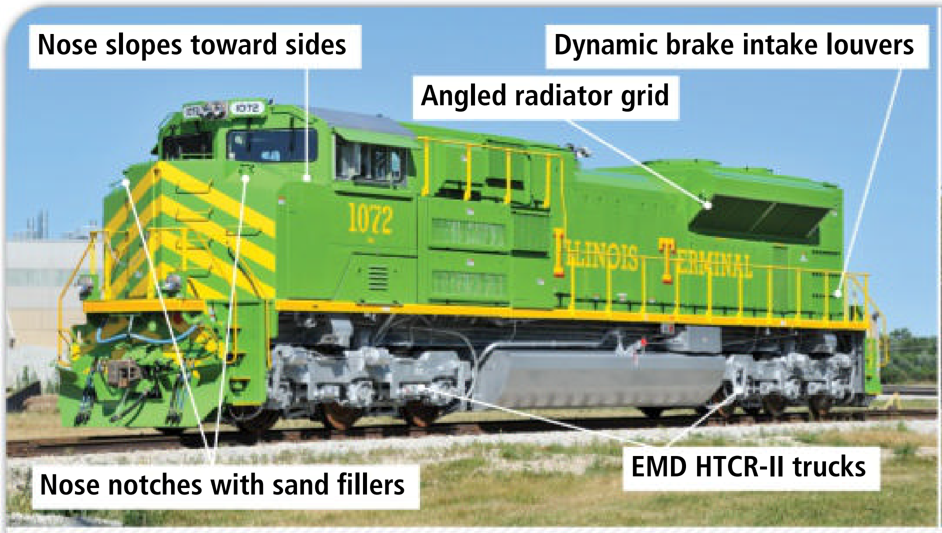
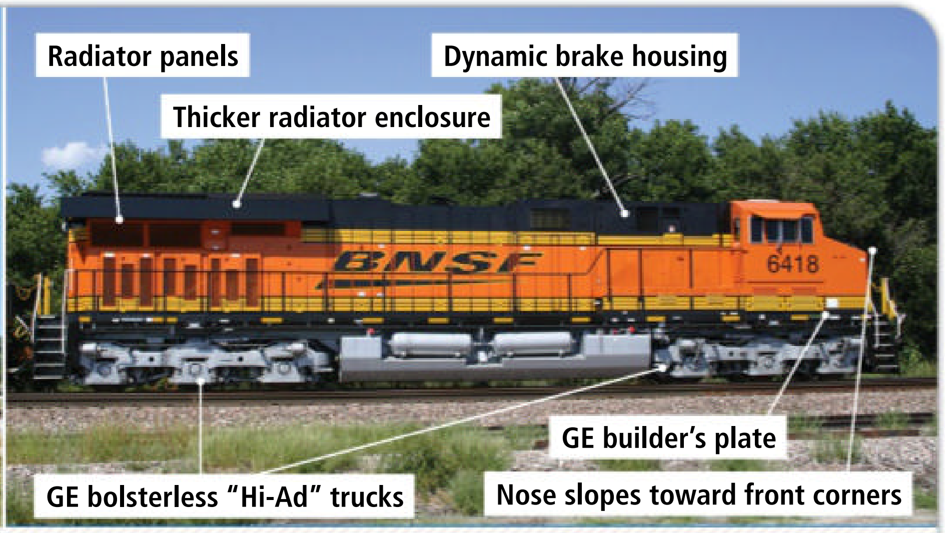


This Norfolk Southern EMD SD70ACe, in an Illinois Terminal heritage scheme, displays definitive EMD heritage in its nose and dynamic brake intakes. Casey Thomason photo


Radiator panels
Dynamic brake housing
Thicker radiator enclosure
GE builder's plate
GE bolsterless "Hi-Ad" trucks
Nose slopes toward front corners

This BNSF Ry. General Electric ES44AC, seen at Abbott, Neb. in August 2009, displays many of the characteristic spotting features of a modern GE diesel. Kevin Piper photo

Spotting features of EMD vs. GE diesels

Q In the good old days, it was fairly easy to distinguish among the major diesel locomotive players. They all had distinctive noses and cabs. Are there some features that will help me tell the difference between EMD and GE diesels on railroads today? Don't get into technical stuff like truck design or the type of windshield wiper blades or the wattage of the ditch lights. I'm more interested in Loco Spotting 101 – the down and dirty when you see a locomotive moving at 40 mph. I know this leaves me open for a sales pitch for Kalmbach books covering this topic.

Neil Berger

A The differences between modern locomotives are subtle, especially since practically every diesel being released these days seems to come with the same North American Comfort Cab. But there are some distinctive features that can serve as pretty good clues.

The most definitive spotting feature, if you can see it on a moving locomotive, is the builder's plate. Look for a small panel, plate, or label at the bottom of the cab or on the sill near the front of the locomotive.

If all you have to go on is a quick impression of the locomotive's shape, there are a few things you can go by. I will caution you, though, that none of these are definitive, because hundreds of different diesel models have been built (and occasionally rebuilt) over the years, and design features change, sometimes radically.

The first thing to look at is the shape of the dynamic brake section. Modern Electro-Motive Division/Electro-Motive Diesel engines, like the SD70ACe at top left, have a radiator that looks like an inverted wedge, with intakes that angle sharply outward from the end of the long hood. But on earlier EMD units, the radiator screens were parallel to the sides of the long hood (notable exceptions were the SD45 and GP40X).

On General Electric models, the radiator section is usually shaped like a rectangular slab at the back of the long hood, supported by a slightly angled intake grill below it. On third-generation models like the Dash-8 series, the radiator has a fairly thin profile. On modern GE diesels, like the ES44AC at top right, it's thicker.

If the locomotive has a wide nose (a.k.a. Comfort Cab or Safety Cab), take a look at the nose. The nose of a GE wide cab usually has triangles that slope downward toward the front corners. Wide-cab EMD noses, on the other hand, usually slope straight toward either side, parallel to the body of the locomotive. Sometimes there's another notch at the front of these sloped sections, where the sand filler cap is.

Finally, since you brought it up, here's the obligatory book pitch. Jeff Wilson's *Guide to North American Diesel Locomotives* is loaded with info about diesels old and new, including spotting features, years of manufacture, railroad rosters, and more. You can get it at the Kalmbach Hobby Store, KalmbachHobbyStore.com.

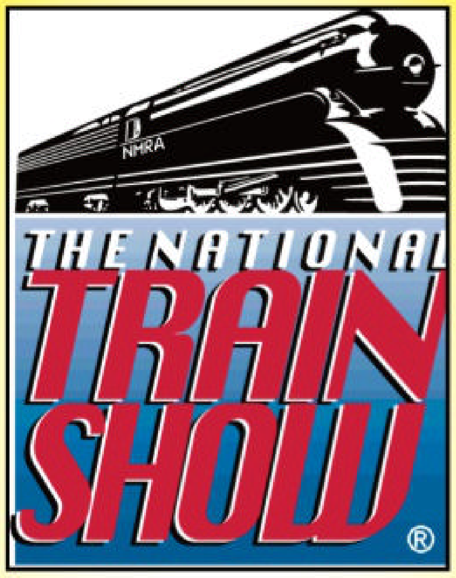
Q I have a 5'-6" x 6'-0" HO scale layout modeling south-central Oregon in the years 1950 to 1979. I want to model the industries that I grew up around in that area – potatoes, wheat farming, cattle ranching, and logging. The members of the train club I'm in say that the railroads quit hauling potatoes, wheat, cattle, and lumber in that area a long time ago. Am I modeling the wrong industries? Should I go with only one of them? I have also been told that my locomotives – 0-4-0, 0-6-0, and 0-8-0 steam locomotives – were not in use by my time period. But I still saw those old locomotives in the area.

Russell Brenchley, Cottage Grove, Ore.

A When your train-club mates say your layout isn't prototypical, repeat after me (and Trains.com video star Steve Brown): "It's my railroad." That's all you need to say. If building and operating your layout makes you happy, you don't have to justify your choices to anyone.

Besides, you have facts on your side. Oregon is still one of the biggest producers of potatoes in the country. According to potato-industry website Spudman, despite railroad staffing and scheduling problems, the railroads still handle 30 percent of potato traffic. Although that article isn't dated, it seems recent rather

You're the kid.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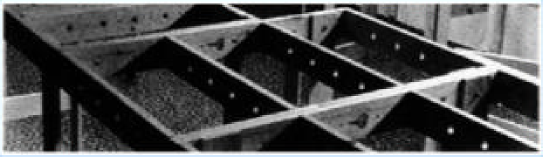

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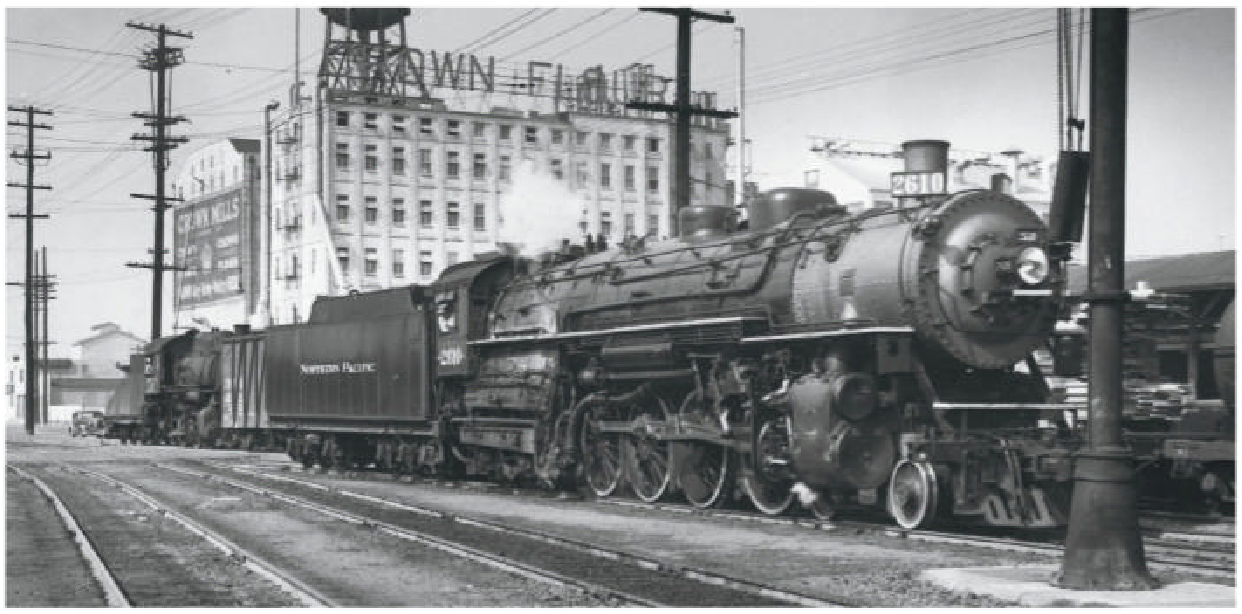
than historical, so back in the era you're modeling potato rail traffic would likely be even higher.

Other data support your other industry choices. While Oregon isn't a particularly large producer of wheat compared to the Great Plains states, it is a major destination of grain traffic. According to a 2016 analysis of grain traffic in the U.S., Oregon was the fourth-largest destination of wheat shipments by rail. This traffic was bound not just for the export market, but also to large flour mills in Portland and elsewhere, like the Crown Flour mill shown in the photo at right.

According to Jeff Wilson's book *Livestock & Meatpacking* (Kalmbach Books), by the end of the time period you model, the combination of inexpensive refrigeration, highway trucks, and regional meat-packing plants spelled the doom of cattle movements by rail. But in the early years of your era, cattle trains would certainly not look out of place on your railroad. Especially not when pulled behind a steam locomotive.



Northern Pacific 4-8-4 No. 2610 backs to pick up the rest of its train in Portland, Ore., in this undated photo. Oregon isn't a big wheat producer compared to Great Plains states, but has a thriving flour mill industry, as evidenced by the large Crown Flour mill seen in the background. Frank MacKinlay, Rail Photo Service

And you don't need my help to justify modeling the logging industry in the Pacific Northwest, in any era. I don't think you're modeling the wrong industries for an Oregon short line.

As for fitting all those industries in a 33-square-foot HO scale railroad, there are options. Fascia structures, backdrop flats, and off-layout industries modeled with a simple spur are all space-saving techniques you could try.

Although it's plausible steam switchers like the ones you mention might still be in revenue service in the 1950s,

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especially on a branch line or short line, your buddies are right that they wouldn't be hauling freights in the 1970s. Maintenance and fuel would be prohibitive. But when they point it out, just repeat that mantra: "It's my railroad."

Q I have an N scale Athearn EMD F45 locomotive with factory DCC and sound, released in 2016. I bought it new, and it worked until I activated different sounds, after which it shorted out. As soon as track power is turned on, my circuit breaker trips. When I tried bypassing the circuit breaker, it shorted out my DCC base station.

I disassembled the diesel and traced the short to the trucks. With the trucks removed from the locomotive, my ohmmeter detects electrical continuity between the left and right wheels. New truck assemblies are not available. What is the fix for this?

Lloyd Horst

A I think the timing of the short coming after you activated different sounds is a red herring. Programming doesn't cause short circuits. I think we can also eliminate a bad wheelset as the cause. Such a problem would have appeared immediately upon putting the locomotive on the track, rather than cropping up later.

I see two likely causes. The first is that something got into the trucks, like a stray knuckle coupler spring, track nail, or metal filings, bridging some contacts within the frame of the trucks. (Lubricating your motor, gearbox, or trucks with a lubricant containing graphite can also cause this problem.) Disassemble the bad truck, look for any conductive detritus, and clean the parts thoroughly before reassembling and lubricating with a tiny drop of plastic-compatible light oil. Make sure the wheelsets go back in the correct orientation, or you'll introduce an all-new source of short circuits.

Another possibility is that a weak solder joint within the truck, such as to a power pickup wiper, broke, and the loose wire or wiper is contacting the other wiper, metal axle, truck frame, or other metal component. If your short is occurring in only one of the trucks, compare the good and bad ones to see what might be out of place and reconnect it. Good luck finding that short.

Once you've tracked down a short to a locomotive truck, like this N scale diesel truck, you'll probably have to disassemble and clean it to find the source of the problem. Steve Miazga photo

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Q I've been a model railroader for many years, and my layouts have all been direct current. My daughter gave me a used diesel that she got at a train show. The box says it's equipped with a DCC plug, but an included card said "factory installed sound." When I put the locomotive on my DC layout and applied power, the engine start-up sounds came on loud and clear. But no lights came on and the locomotive didn't move no matter how much power I applied. Will it not run on DC? Must I have the DCC removed? I have no idea what make the DCC decoder is.

Kurt Buescher, Crowley, La.

A I have a few ideas. Idea 1 isn't the most likely, but it's the easiest to check. It could be that the locomotive isn't getting enough voltage. Sound decoders take a lot of voltage to get rolling, some as much as 10V. Use a voltmeter to check the voltage on your rails; it might be enough to activate the sounds, but not the motor.

Next, we'll see if the motor is working. Look in the box for a small jumper board that plugs into the motherboard in place of a decoder for DC-only operation. If you find one, unplug the decoder and replace it with the jumper (being sure to install it in the right direction). Then see if the engine runs under DC. If not, the motor is your problem. If it does, the problem is the decoder.

A more likely cause is that the decoder requires programming to run on direct current. Not all dual-mode decoders switch modes automatically. You might have to borrow a friend's DCC layout to program a Configuration Variable (CV) to enable analog operation. Analog mode operation is one of the functions controlled by CV29. A value of 1 in CV29 bit 2 turns on analog mode. Put your locomotive on a programming track and read the value of CV29. Use an online decimal-to-binary converter (like binaryhexconverter.com/decimal-to-binary-converter) to change that value to binary. If bit 2 (the third-to-last digit) is 0, add 4 to the decimal value and program it back into CV29.

For more ideas to try when your DCC locomotive won't move, check out the DCC Currents column in December 2021's *Model Railroader*. MR

Send questions to senior associate editor Steven Otte at AskTrains@Trains.com.

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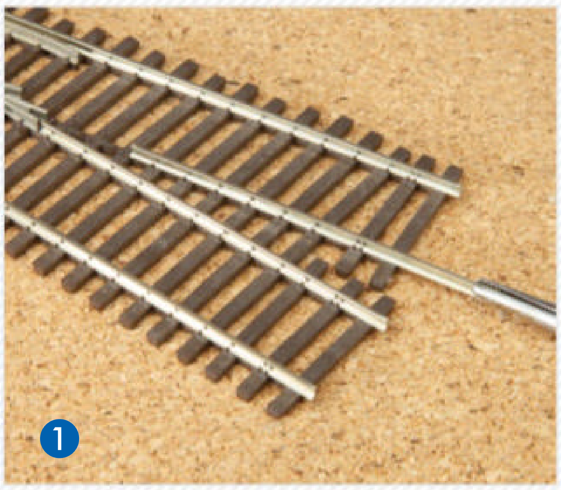
Quick and easy crossovers

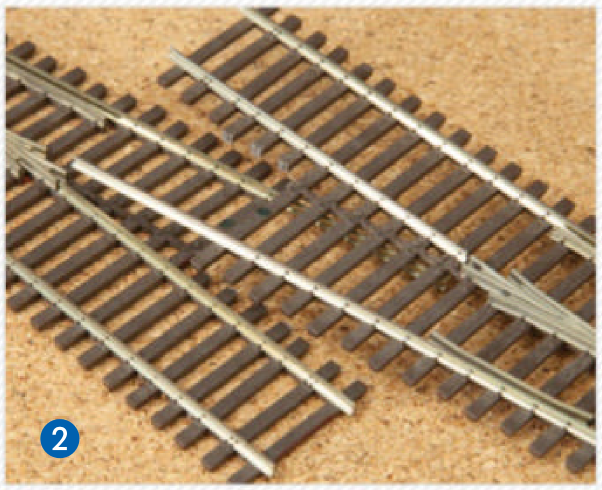
Crossovers are a common feature on model railroads allowing trains to cross from one set of tracks to an adjacent, parallel set. However, installing a crossover can require measuring, cutting and soldering rails, installing rail joiners, and making sure the whole installation is DCC friendly to prevent shorts.

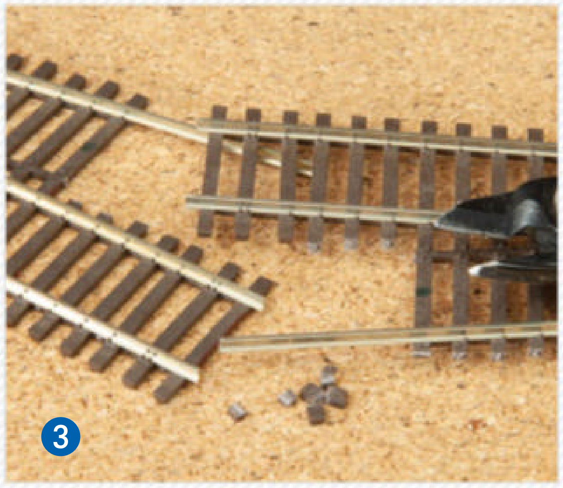
In one recent weekend I installed 30 turnouts in Monroe Yard on my Piedmont Southern layout, and that included six crossovers. During that marathon track laying event I discovered a way to make crossovers in a matter of minutes without any cutting or soldering of rails. Let me take you through the steps in this process.

In my situation, the parallel tracks need to be installed with 2" track centers on straight sections. This spacing is common for HO, and I have always used it on all my straight tracks. Also, I have only tried this method with Micro Engineering No. 6 turnouts. Other brands and sizes of turnouts may also work, but will require some experimentation. Because crossovers consist of two turnouts laid in opposing orientation, each crossover requires a pair of Micro Engineering No. 6 turnouts.

STEP 1 PREPARATION



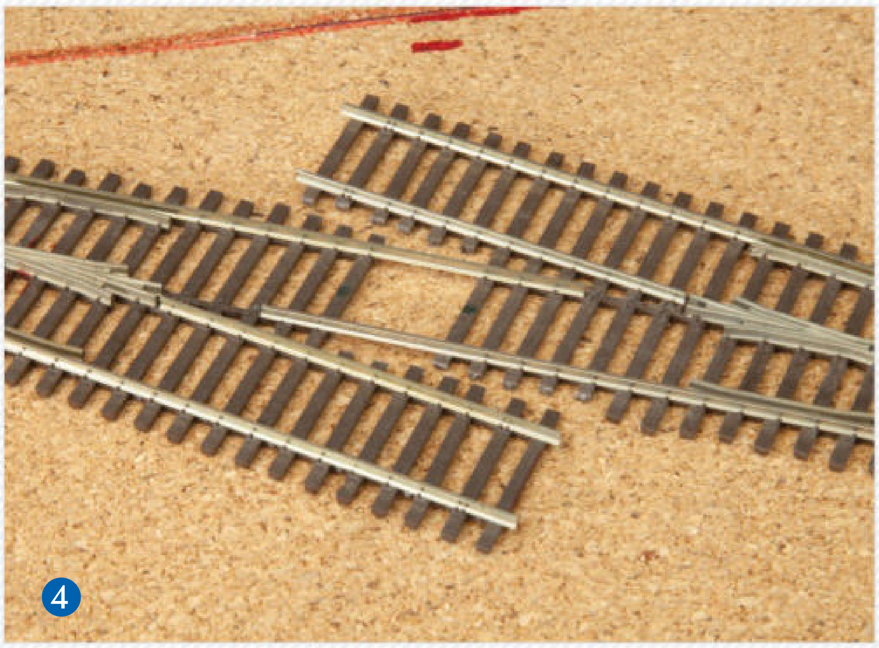




First, I laid the turnout on a flat surface and held it firmly with one hand. Using a hemostat (a pair of needle nose pliers will also work), I grasped the end of the short frog rail on the diverging leg of the turnout ①. Being careful to keep the rail perfectly horizontal, I pulled it away from the frog and out of the plastic spike heads. I made sure not to lift the rail at any point during this process to avoid damaging the plastic spike heads; you need them to hold the rails in place on the completed crossover. I repeated this process with the second turnout.

The next step is to trim a few overlapping ties from the turnouts. This is necessary so they will fit together. There are 11 ties between the end of the frog casting and the end of the turnout. On one of the turnouts I removed the last five ties and on the other I removed the last six. Next I overlaid the two turnouts in the position they would occupy on the layout and noted the tie ends that overlapped ②. Using a sharp pair of track cutters, I removed a little from the tie ends on each turnout so they would fit together ③.

STEP 2 BUILDING THE CROSSOVER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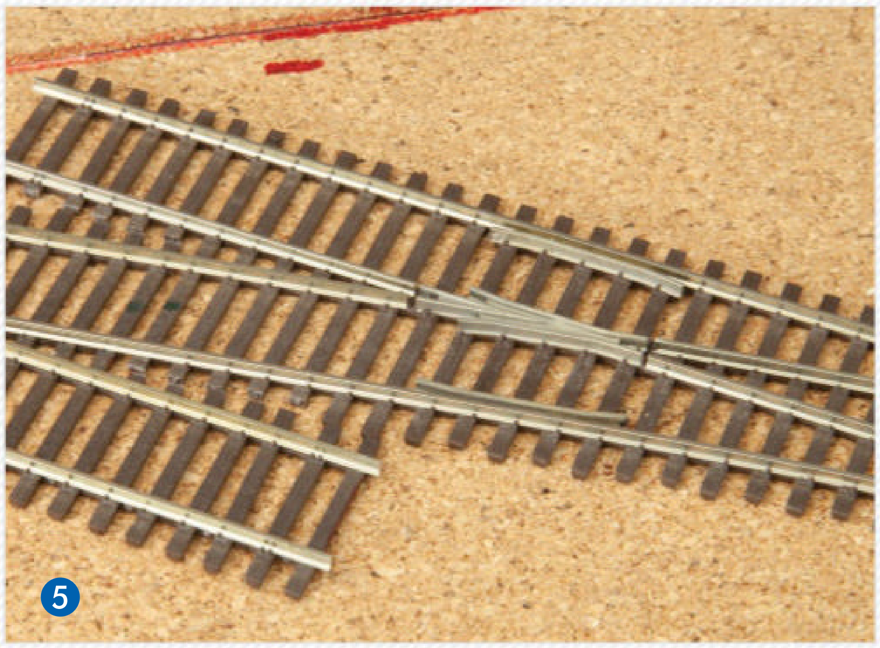
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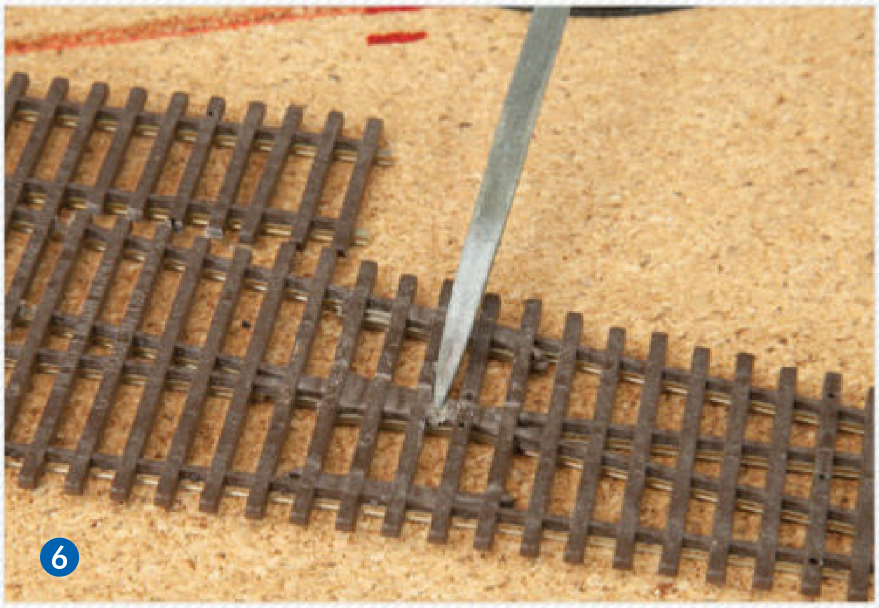
Once the turnouts fit together, I laid them on a flat surface with the diverging rails facing each other. I inserted the ends of the frog and stock rails into the plastic spike heads on each turnout and slowly slid them in until they reached the plastic stop next to the frog ④. By working carefully I was able to insert the rails without damaging the small spike heads. I was also careful to not damage the rail stop, as it prevents the rails from pushing up against the frog and creating a short after installation.

At this point the crossover was complete. All that is required is soldering a feeder to the bottom of the frog casting and installing it ⑤. I placed the crossover on the roadbed and, using a marker, made a small dot on each side of the frogs adjacent to where the feeders would be located. I removed the crossover and drilled a ⅛" hole between the two dots.

STEP 3 INSTALLATION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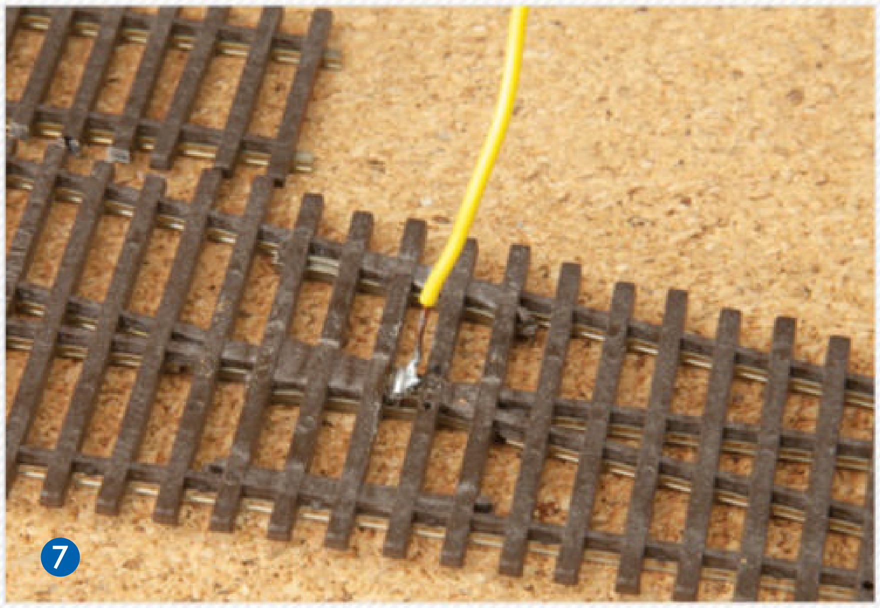
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I flipped the crossover over and looked for the small dimple in the bottom of the frog casting for attaching feeders. I prepared this spot for soldering by filing it and applying a spot of resin flux ⑥. With a soldering iron I heated the casting until solder flowed when applied. I place a tinned feeder on the dimple I had just tinned on the bottom of the frog casting and applied heat with the soldering iron ⑦. Once the solder cooled, I flexed the feeder wire to make sure I had a solid joint.

To install the crossover I applied Liquid Nails for Projects construction adhesive to the roadbed, and using a putty knife, spread it out, avoiding the areas under the switch rod. A thin layer is all that is necessary and prevents adhesive squeezing up between the ties. I pressed down on the turnout to get good adhesion; a wallpaper seam roller works well for this, but hand pressure will also work.

With the adhesive dry, the job was done. All I now need to do is install the Micro Engineering flex track and the yard will be ready for wiring.

[Larry explains how to wire track like this in his book *Wiring Your Model Railroad*, available from KalmbachHobbyStore.com. *–Ed.*] MR

A forest built from Scenic Express SuperTrees stands behind Chama Yard on Kim Nipkow's HO scale Cumbres & Toltec Scenic RR modular layout. Though real trees can be much taller than most scale representations commercially available, Kim shows how to build taller models using SuperTrees.

Seeing the forest for the trees

Fill a forest quickly and easily with tall scratchbuilt trees

By Kim Nipkow • Photos by the author

When I modeled Chama, N.M., in HOn3 [see Kim's article in the September 2019 *Model Railroader –Ed.*], I wanted to model a rather large forest on the north end of the yard. Realistic model trees can be pricey, time consuming, or both. So I used an easy and efficient method to model a lot of trees in a moderate period of time.

First of all, when you want to model realistic trees, consider that most of the products that are available for purchase are far too small to be realistic. A mature tree can easily reach 50 to 70 feet tall, which comes out to around 8 to 10 inches in HO scale. But this doesn't mean that you need to spend a lot of time to make a big tree.

There's a fantastic product available called SuperTrees from Scenic Express. SuperTrees are a dried natural plant product. They're the twigs of a shrub related to sagebrush that grows in tundra regions.

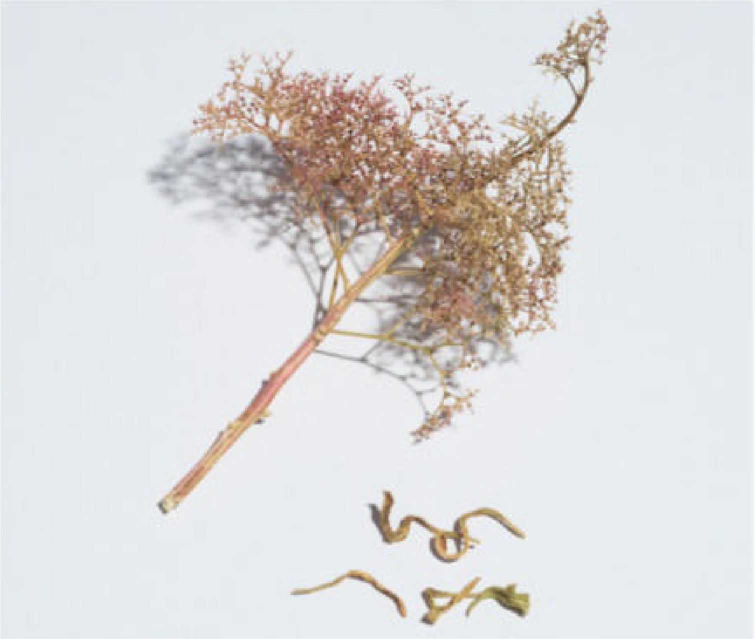
Since SuperTrees are natural products, they come in a variety of shapes and sizes. The bigger and more symmetrical ones can be used as they are as small model trees. Just spray them with brown-gray paint, add spray adhesive, and sprinkle on leaf flock such as Noch leaves. Smaller, misshapen, and broken pieces of the SuperTree armatures can be used for shrubs or put together to build a bigger tree. Check out these photos to see how.

Kim Nipkow lives in Switzerland and exhibits his modular layout at train shows around Europe. His Chama, N.M., modules were featured in the September 2019 MR. For more photos of his modules and dioramas, go to www.kimoli.ch.

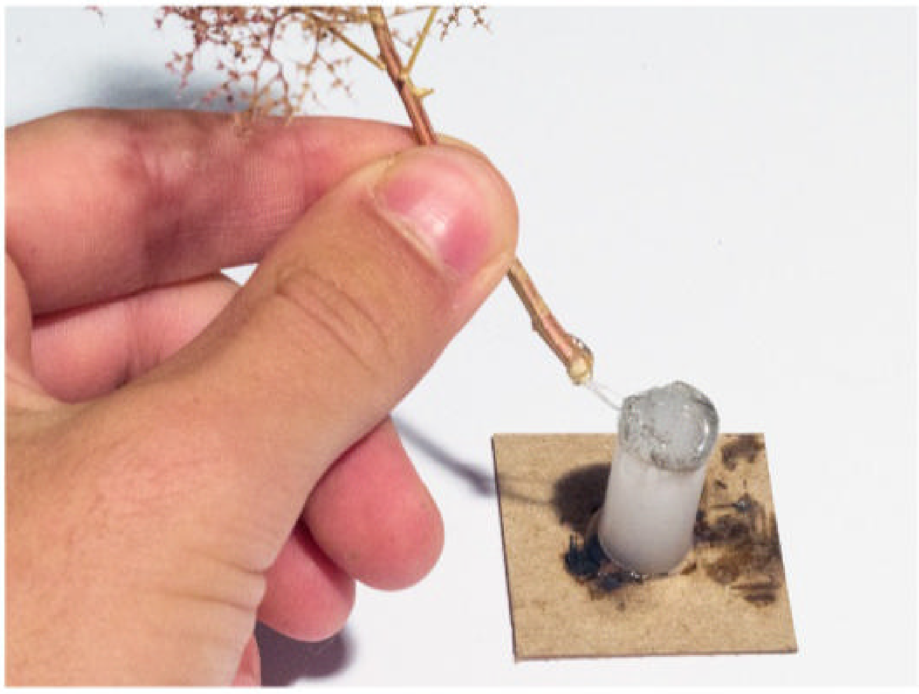
Scenic Express SuperTrees are available in bulk boxes that hold enough to make dozens of trees. Since they are natural dried plant products, the trees come in a variety of sizes and shapes.

A large, well-shaped armature like this one could be used as a small tree without modification. Smaller, bent, or broken pieces can be used as shrubs or to build a larger tree.

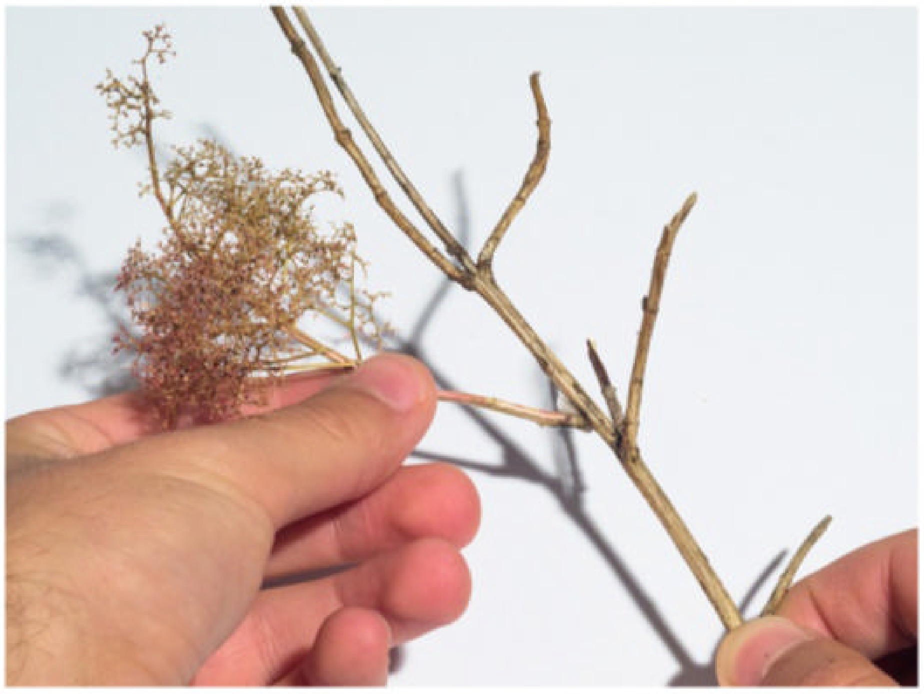
To build a bigger tree, Kim starts with a trunk. This one is a twig of summer lilac from a plant in his backyard. Any similar branch will work just as well. Trim the branches and let it dry.



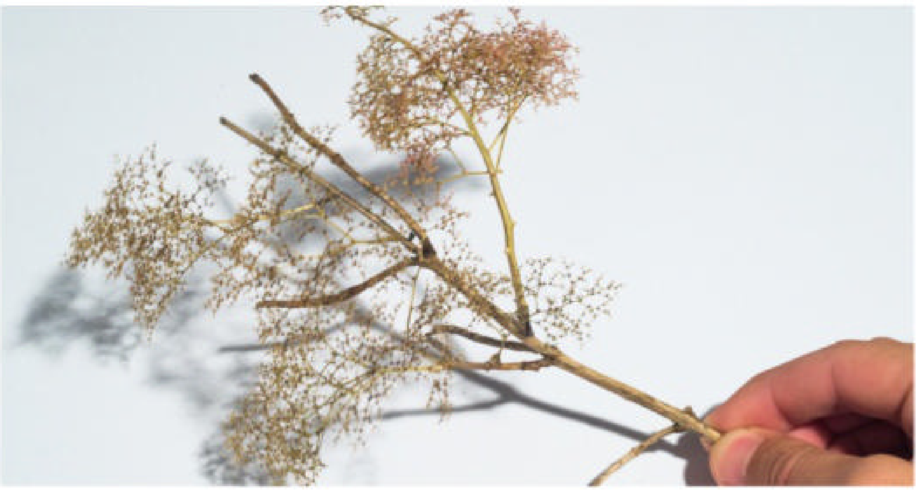
Next, pick a small piece of SuperTree material that's sized and shaped to make a good branch for your tree. Use tweezers or a hobby knife to remove any remaining leaves on the branch.



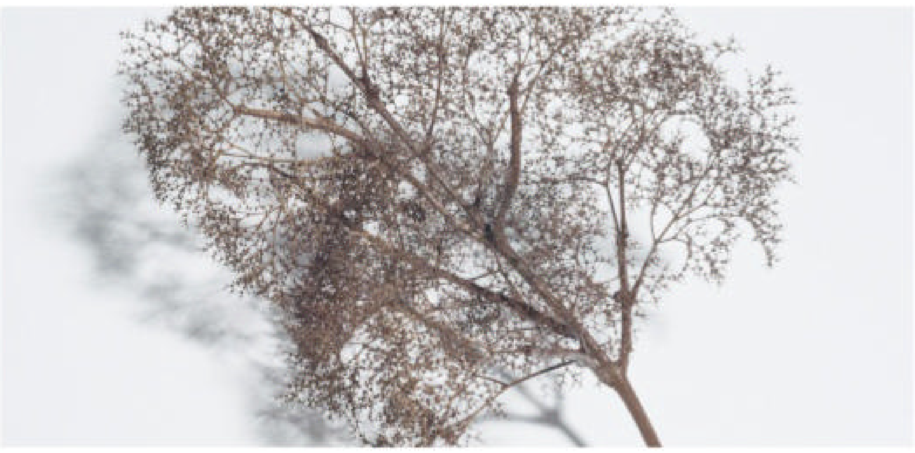
Kim uses hot glue to adhere his branches to the trunk. He sticks a glue stick to a cardboard base and melts the tip with a lighter. He then dips the end of the branch into the hot glue.



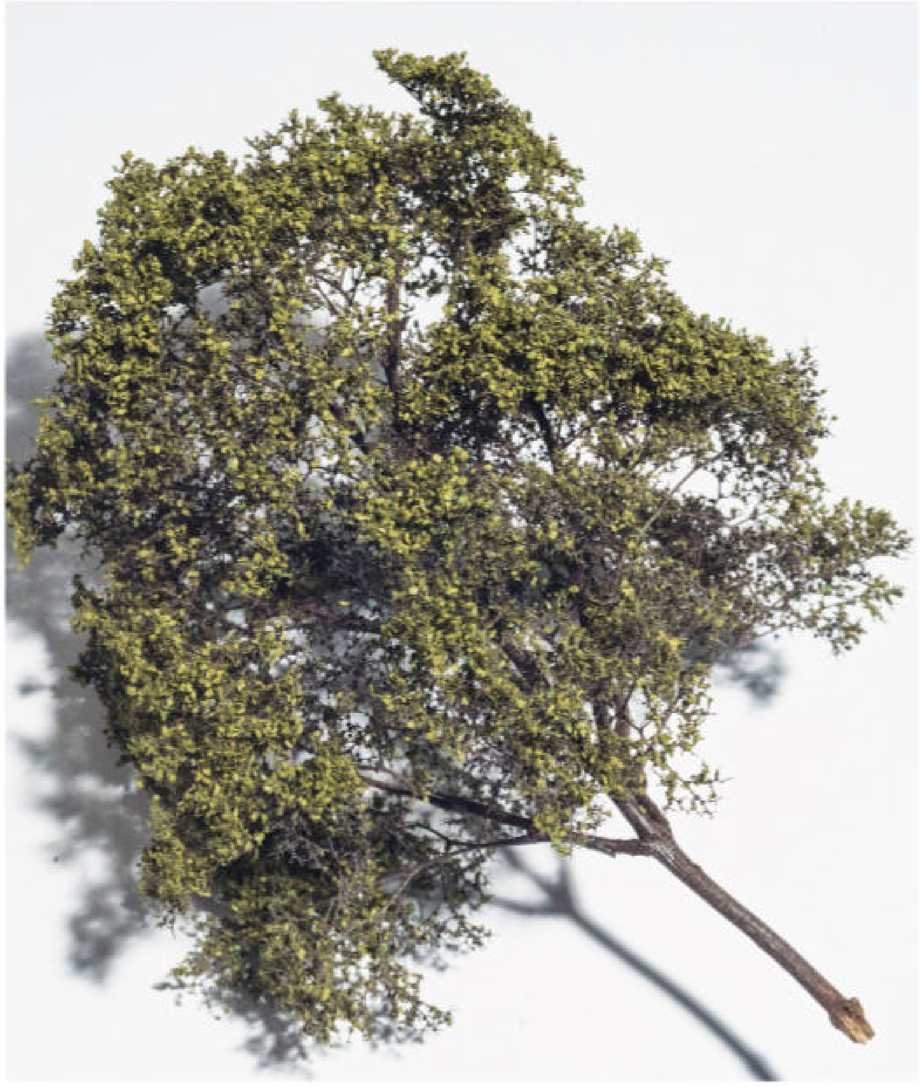
After burning off any dangling hot-glue strands with a quick pass through the lighter flame (do this carefully – SuperTrees are highly flammable!), Kim sticks the branch to the trunk.



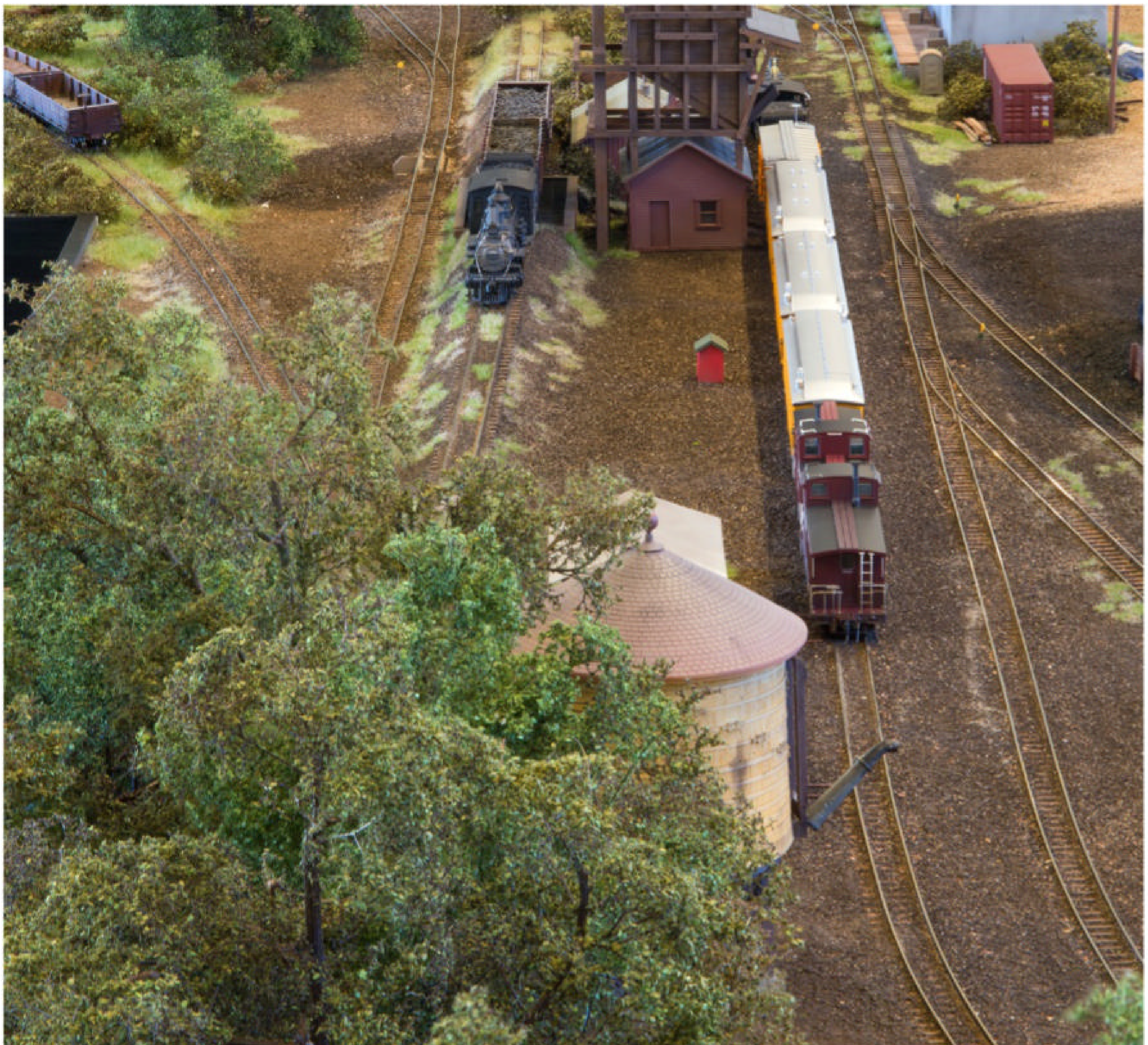
One by one, add more SuperTree branches to your trunk. Remember that on real trees, branches and leaves grow upward, toward the sun. Use photos to guide your shape.



After about 15 minutes of work, the "fully grown" tree is ready for finishing. Spray-paint the tree a dark brown color. When that dries, spray the branches with spray adhesive.



Next, Kim sprinkles foliage onto the adhesive. He uses Noch Leaf Flake in olive and medium green. Add more adhesive and flock until it looks right. Now your tree is ready to plant.



Adding SuperTrees branches to a twig trunk lets Kim scratchbuild trees that are a more realistic height. His finished trees tower over the structures and trains on his HO scale Chama module, as a real old-growth forest would. MR

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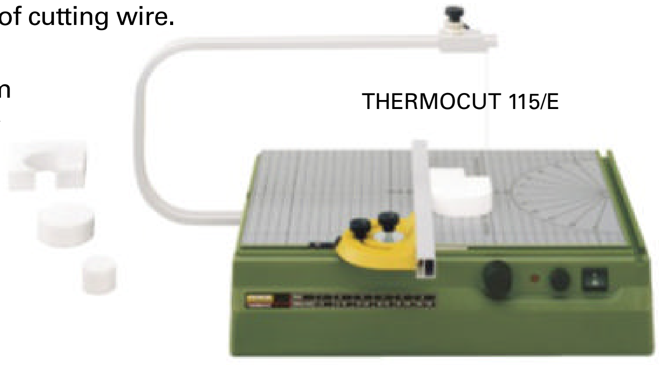

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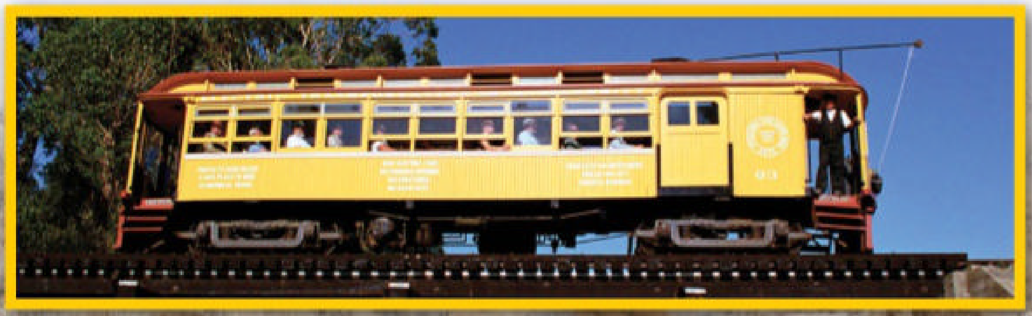

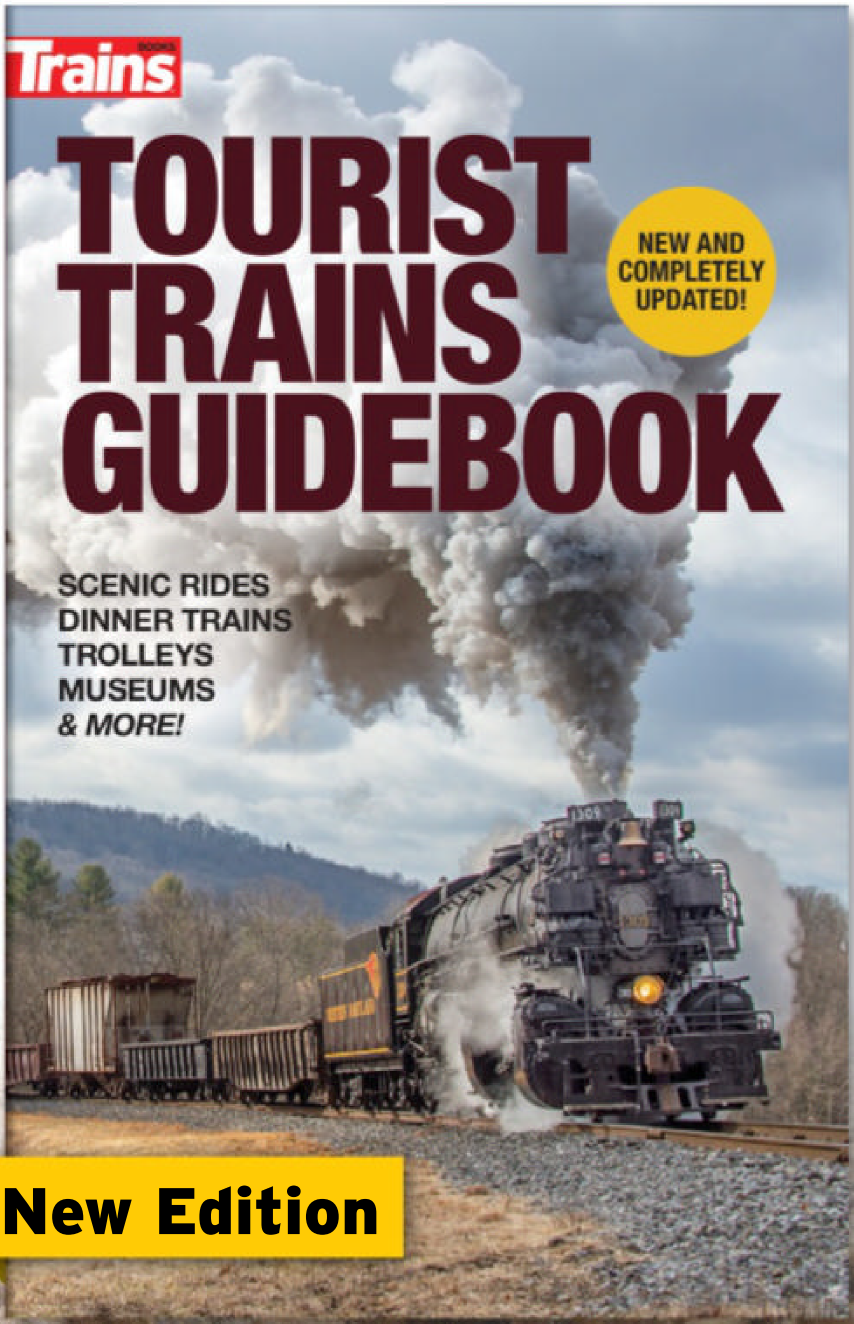

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RAIL CROSSING ROAD
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Georgia Northeastern Electro-Motive Division GP20 No. 4125 crosses Sawyer Road on Tom Klimoski's HO scale model railroad. In this article, he explains the steps he took to model this active grade crossing scene.

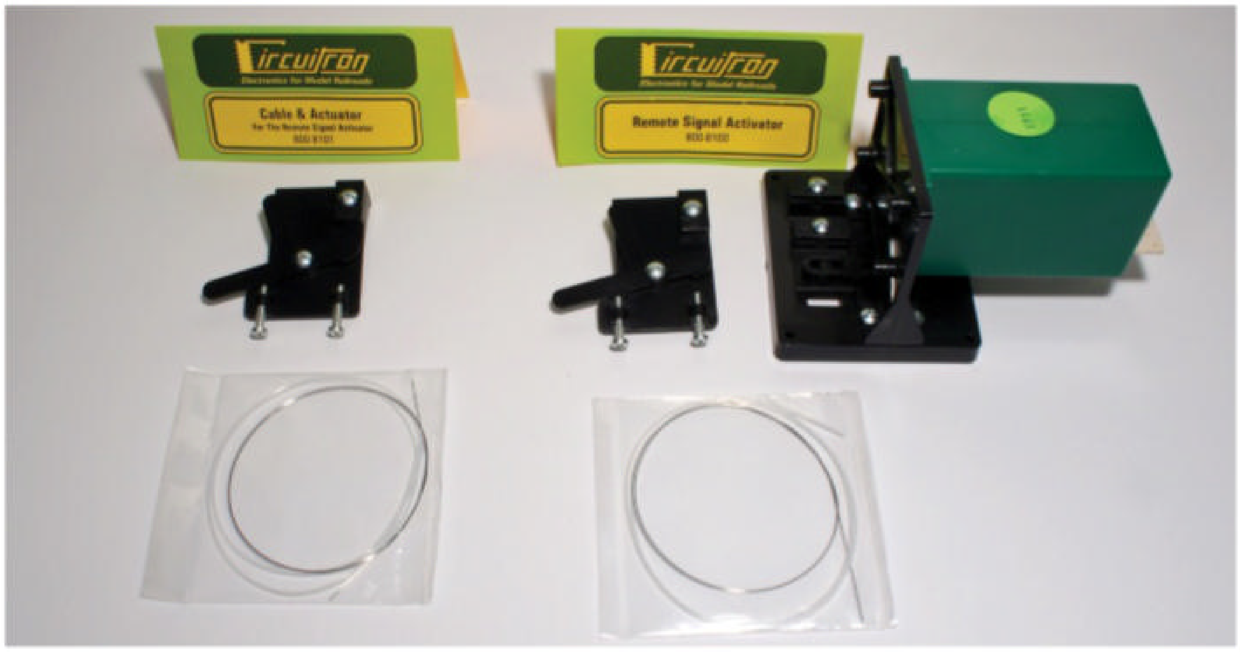
Installing an ACTIVE GRADE CROSSING

Create a scene with lights, action, and sound

By Thomas Klimoski
photos by the author

Thousands of times each day, red lights begin to flash, bells ring, and gates come down as trains approach railroad grade crossings all across the country. Grade crossing gates improve safety and warn the public that a train is soon expected at the crossing. By using commercially available components, modelers can replicate this important safety feature on their layouts and have operating grade crossing signals with gates.

For this project on my layout I selected the H-863 crossing signals with gates from Tomar Industries. This style of crossing gate closely resembles the one found on my prototype Georgia Northeastern RR at the Sawyer Road grade crossing. The kit from Tomar includes two crossing signals with gates, a Tortoise by Circuitron switch machine, a Circuitron Remote Signal Activator (No. 800-8100), and Cable and Actuator (No. 800-8101) kits to operate the gates ❶. I also chose a Logic Rail Technologies Grade Crossing Pro for the flasher circuit and detection system for the crossing signals. Finally, I selected an ITT Products GL Sound Module and speaker available from Logic Rail Technologies for the bell ❷. Follow along as I describe how I installed the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❶ The Tomar Grade Crossing kit includes the two crossing signals with gates, a Tortoise by Circuitron switch machine, a Circuitron Remote Signal Activator, and a Cable and Actuator kit.

grade crossing signals and the various other components to make an operating grade crossing signal.

Prototype research

Prior to installing the grade crossing signals, I did some research on the prototype requirements for grade crossings. Online I located a copy of the *Railroad-Highway Grade Crossing Handbook* published by the U.S. Department of Transportation Federal Highway Administration. The handbook provides a vast amount of information, instructions, and diagrams for various types of grade crossings.

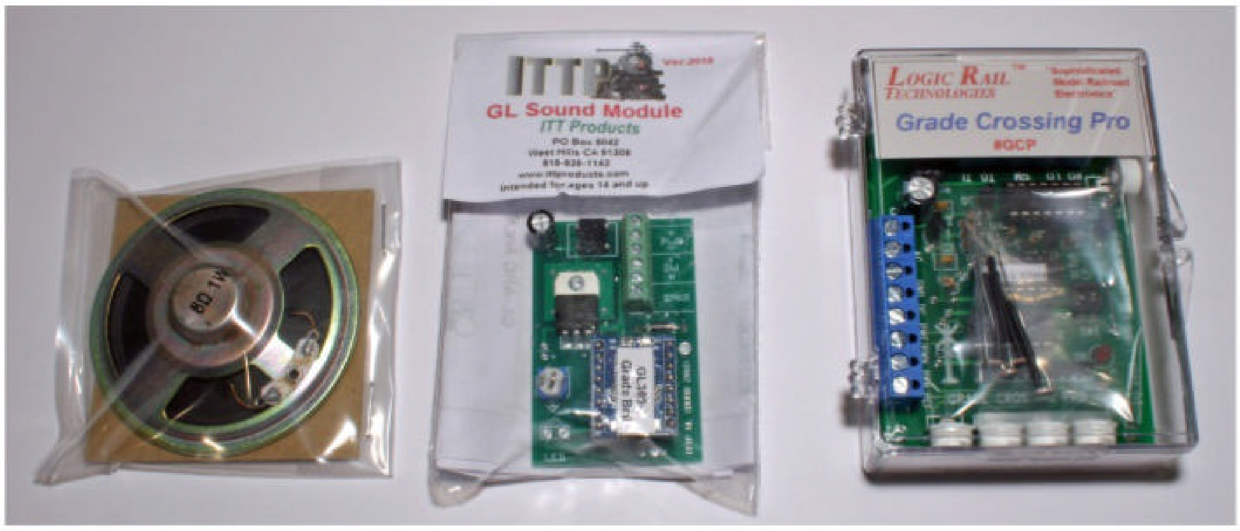
While each grade crossing installation is unique, a few standard requirements became apparent. The grade crossing signal should be installed a minimum of 12 feet away from the track centerline closest to the crossing signal. In addition, the crossing signal should be installed a minimum of 2 feet away from the edge of the roadway to the part of the signal nearest the roadway. Further information on the proper location of signals can be found in the document that can be applied to your specific modeling situation.

Selecting a location

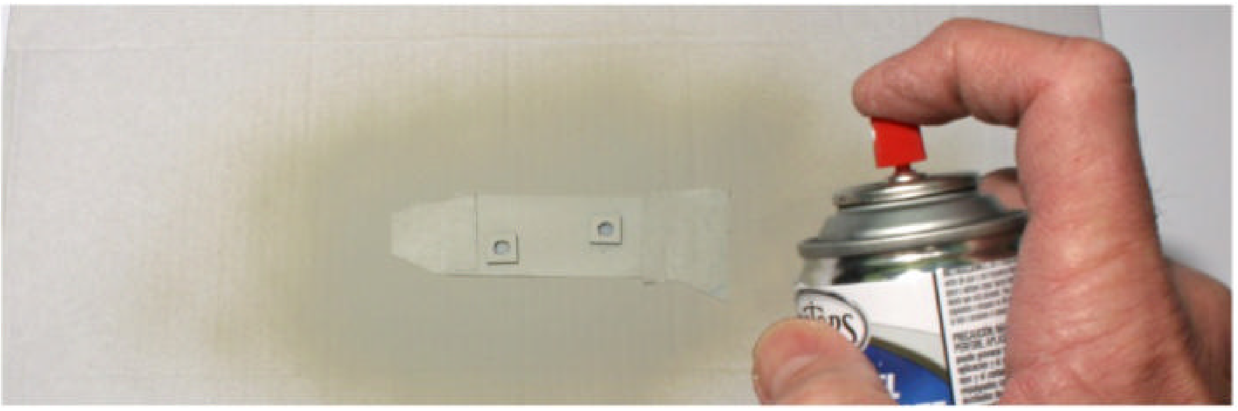
Once I had the information I needed to determine the proper location of the signals, I began by measuring 12 scale feet back from the track centerline to mark the location of the signal. Next, I measured the crossing signal and determined the distance from the center of the mounting post to the outside edge of the crossing signal lights.

With the exact location of the crossing signals established I cleaned off the previously installed scenery materials and added a piece of sheet cork to raise the base of the crossing pedestal. Using white glue I attached the cork to the foam base and allowed it to dry while I worked on making a concrete base for the signals. After the glue dried, I drilled a 3⁄16" hole through the cork and foam base to accommodate the mounting post of the signal.

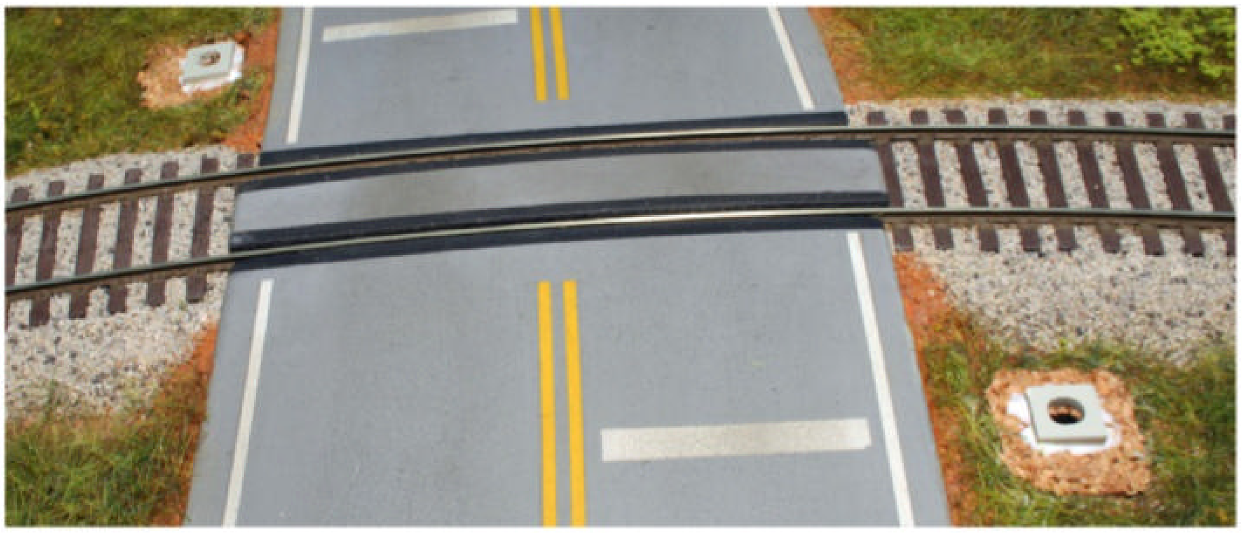
Using .060" styrene, I cut out a piece that was the same size as the crossing signal pedestal base. I drilled a 3⁄16" hole in the center of the base and painted the base with Testor's gray spray enamel ❸. Once it was dry, I glued it with adhesive caulking to the cork base ❹ and added Arizona Rock & Mineral gravel around the base.



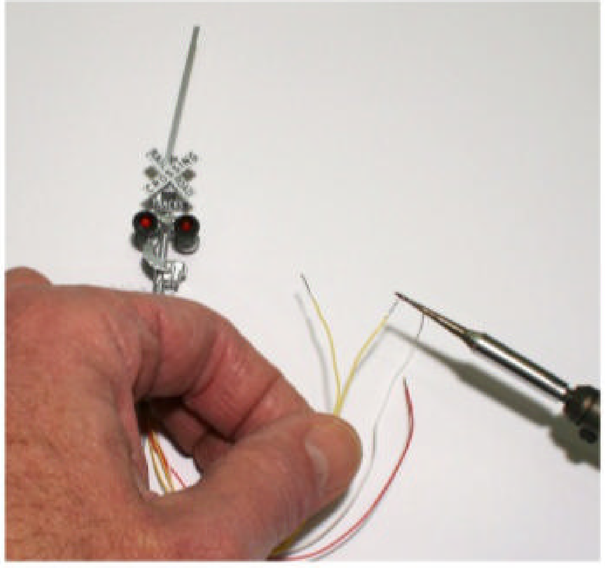
❷ The Logic Rail Technologies Grade Crossing Pro includes the flasher circuit and train detection system. The ITT Products GL Sound Module activates the bell.



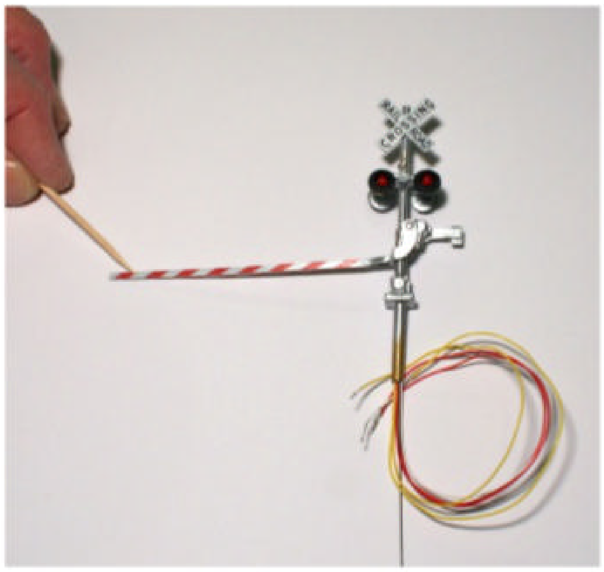
❸ Tom cut two pieces of .060" styrene to the same size as the crossing pedestal base. After drilling a 3⁄16" hole in the center of each piece, he spray-painted the styrene with Testor's gray enamel.



❹ After the paint had dried, Tom attached the styrene to a piece of cork. This provided a level and stable base for the crossing signals.



❺ Tom tinned the tips of the wires for the light-emitting diodes prior to installation. This made it easier to attach them to other wires.



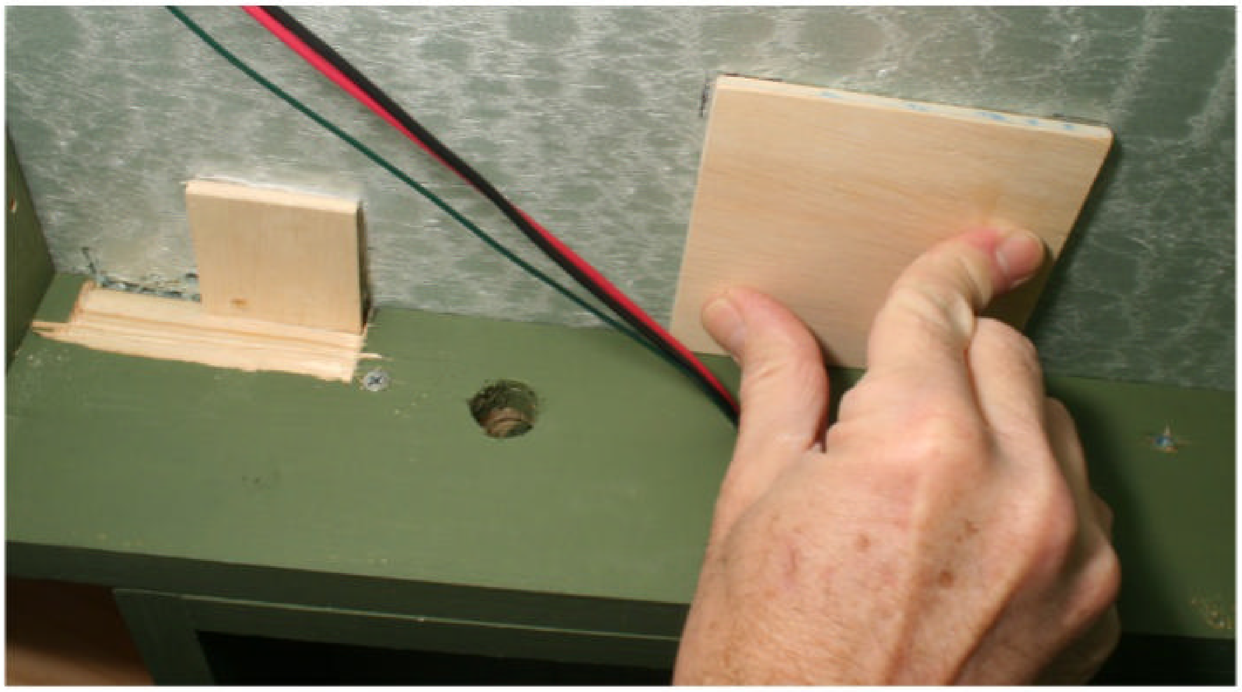
❻ The grade crossing kit includes two decal options for the arms. Tom used the red-and-white stripes for his modern era layout.

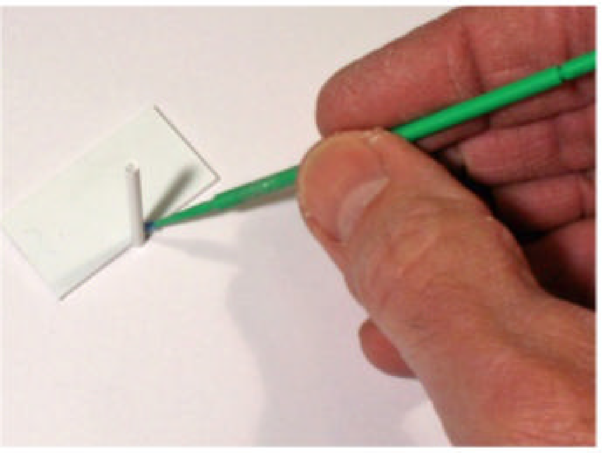
For the final step of the base installation I slightly enlarged the 3⁄16" hole in the 2"-thick foam that I had drilled for the mounting post to pass through. Next, I inserted a 3⁄16"-diameter drinking straw from the bottom of the layout up to the styrene base of the crossing signal and cut the straw off even with the bottom of the foam. The straw provides a smooth conduit to pass the delicate crossing signal wires through.

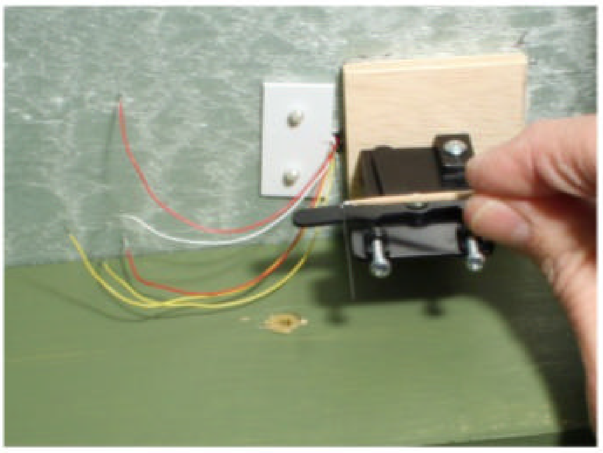
Preparing the crossing signals

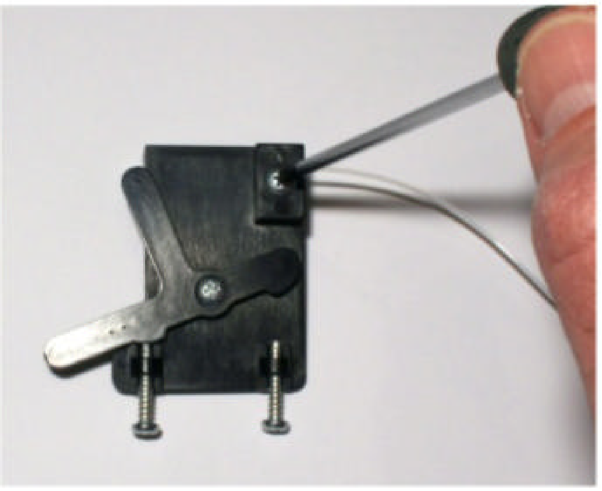
The crossing signals with gates are factory-painted and almost ready to install right out of the package. Prior to installation, I tinned the tips of the stripped wires for the light-emitting diode (LED) lights ❺. Then I applied the red and white stripe decals to the gate arms ❻. The kit includes both black and white or red and white stripe decals as appropriate for your modeling era.

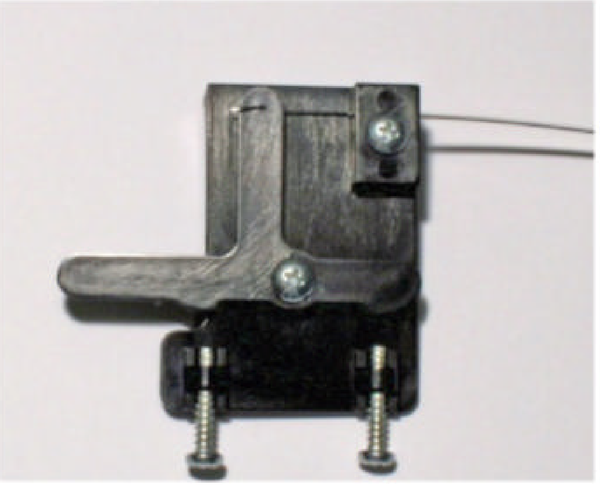
With the crossing signals ready to install, I inserted the LED wires and the gate control wire into the hole in the base and carefully slid the assembly into position. I used Aleene's Tacky Glue to attach the crossing signal to the styrene base and allowed it to dry before moving on the next step.


❼ Tom used foam-safe adhesive to attach wood mounting plates to the bottom of his layout. The plates allowed him to secure the drive mechanism and actuators with screws.


❽ Tom used 1¼" lengths of 3⁄32" styrene tube as guides for the gate actuating wire. He glued the edge of the tube to a piece of styrene.


❾ The next step was to bend the gate actuating wire. Tom marked that location using white paint applied with a toothpick.


❿ Tom used a Phillips-head screwdriver to clamp the tubing in the bracket on the actuator. He then ran the actuating wire through the tubing.


⓫ After bending one end of the stainless steel actuating wire into a Z shape, Tom inserted it into the bell crank arm.

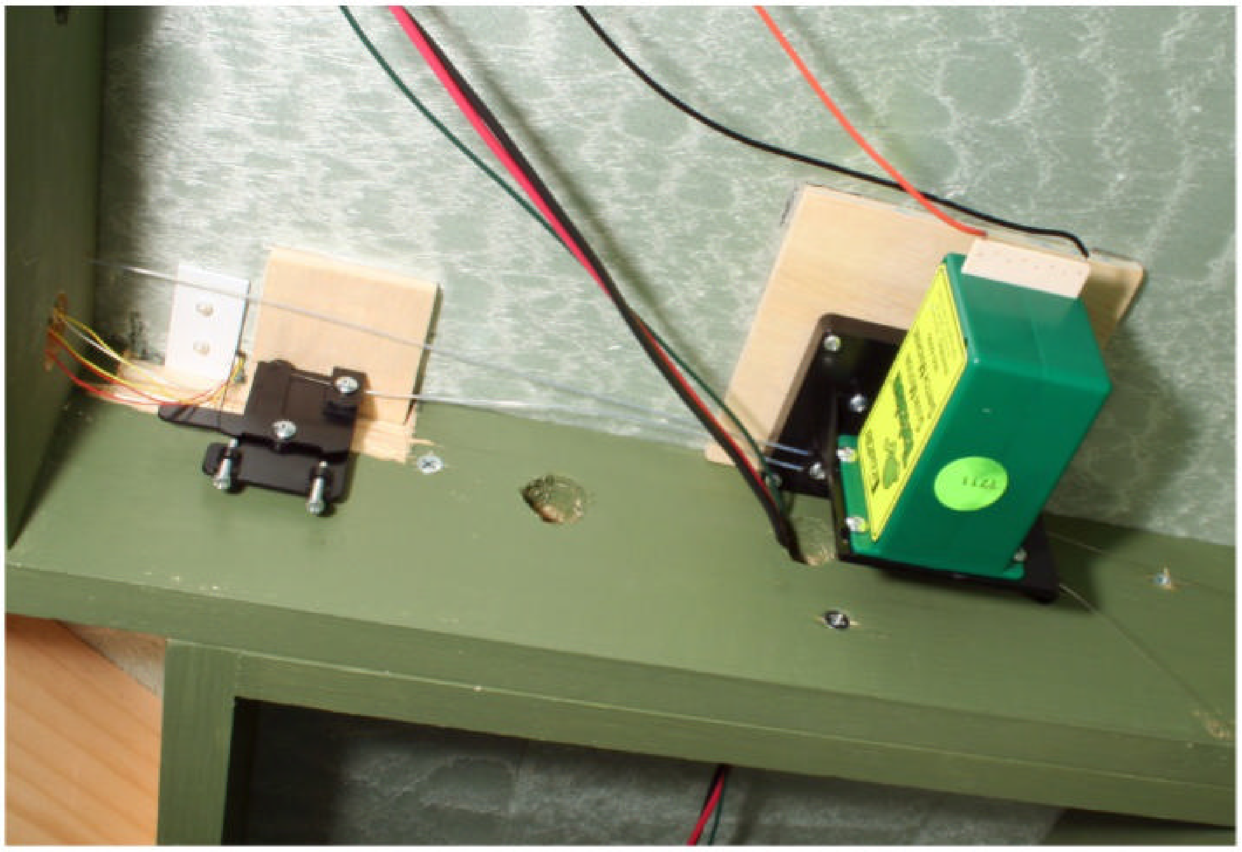
Attaching the gates

My layout is constructed with 1 x 4 framing and extruded-foam insulation board for the base layer. To mount the signal activator and drive mechanism I needed to attach a wood mounting surface that would allow me to screw the actuator and drive mechanism brackets to the underside of the layout. I cut two pieces of 7⁄32" thick finished plywood into 2" square pieces for the actuators, and one 4" square piece for mounting the drive mechanism.

Next, I began the assembly of the drive mechanism and the two actuators following the instructions in the kit. The first step is determining the total travel distance of the signal by measuring the distance between both extremes of travel of the gate actuating wire. Once you have the measurement you then refer to a chart in the instructions. The chart indicates which holes in the drive mechanism and the actuator bell crank is correct for your application. After determining the correct holes, I drilled them out in the bell crank with a No. 76 bit in a pin vise that matched the diameter of the actuating wire. I then assembled the mechanism using the correct pivot number for the travel distance. The instructions recommend mounting the drive mechanism as close to the actuator with the wire running as straight as possible between locations.

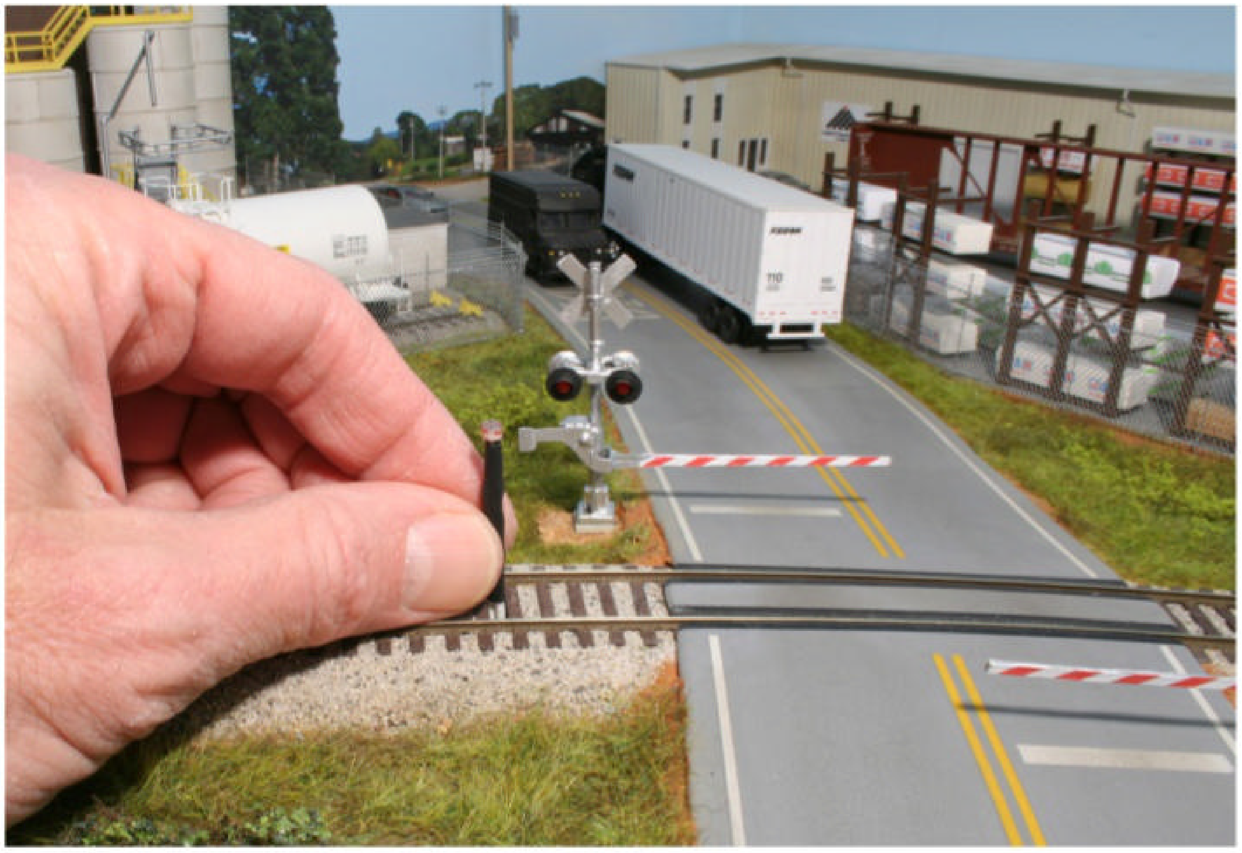
With the location of the actuators determined, I marked the location of the wood mounting plates. Both actuator clamp plates that hold the tubing wire should face in the direction of the drive mechanism with the bell crank arm pointed away from the drive mechanism. I marked the location of the mounting plate for the drive mechanism and attached the wood to the bottom of the layout using adhesive caulking ❼.

I then made a guide bracket from styrene tubing to prevent the wire from bending when moved in the upward direction. The distance from the bottom



⑫ Tom clamped the other end of the tubing in place in the bracket on the drive mechanism. He left the actuating wire oversized and trimmed it later.

⑬ To offset the solder points on each leg, Tom attached a length of 22AWG wire. He covered the solder joints to prevent short circuits.



⑭ Tom inserted the photocells for the grade crossing flashers from the top of the layout. He used a small amount of white glue to hold them in place.

of the crossing gate mounting post to the underside of the foam base is 1¼". I used a piece of 3⁄32" styrene tubing cut to that length and glued to the edge of a small piece of strip styrene ⑧.

After securing the actuators, I established the correct location to bend the gate actuating wire to a 90 degree angle and used a toothpick with a dot of white paint to mark that location on the wire ⑨. Next, using a pair of pliers to hold the wire at the correct spot, I bent the wire and inserted it in the proper hole in the bell crank. I used a fishing weight crimped to the wire to hold it tight against the bell crank. I checked the operation of the crossing gates by moving the bell crank up and down, and the gates moved smoothly through the complete range of motion.

Next, I cut the Teflon tubing that runs from each actuator to the drive mechanism to length. I clamped the tubing in the bracket on the actuator ⑩ and inserted the actuating wire through the tubing. Then I bent one end of the stainless steel actuating wire that slides through the tubing into a Z shape and inserted it into the bell crank arm ⑪. I clamped the other end of the tubing in place in the bracket on the drive mechanism. I left the actuating wire oversized and clamped it into the slide plate clamp on the drive mechanism ⑫.

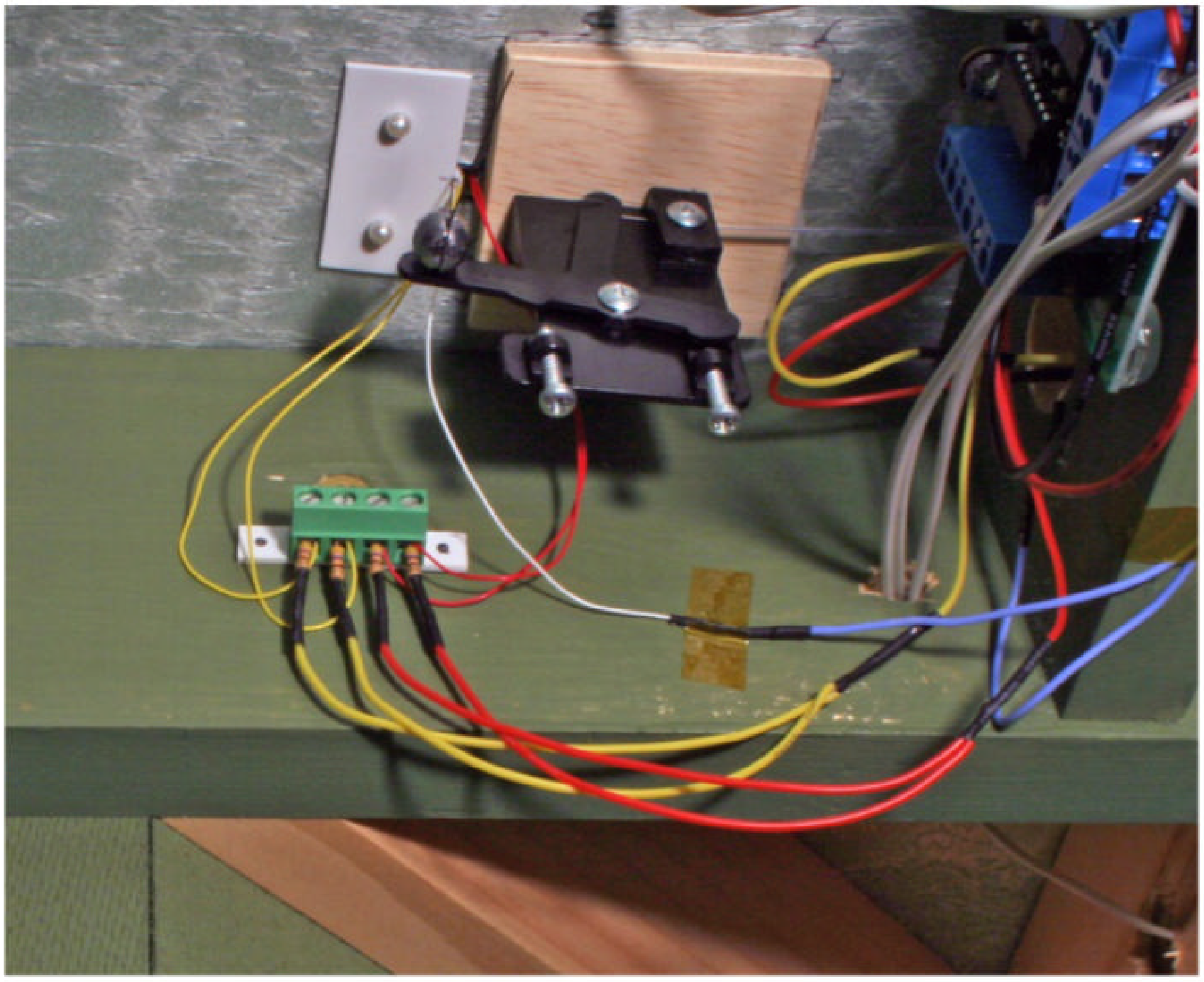
Finally, I connected the power wires to the Tortoise and tested the operation of the gates using a 9 volt DC power supply. I made adjustments to the gates' range of motion by moving the stainless steel actuating wire in the clamping bracket on the drive mechanism or relocating the gate actuating wire to another hole on the bell crank arm. This step was the most tedious in the entire crossing gate installation process. Once I was satisfied with the operation of the gates, I trimmed off the excess actuating wire that extended past the drive mechanism slide plate clamp.

Installing the photocells

The Logic Rail Technologies Grade Crossing Pro includes four photocells to provide bidirectional train detection. The system activates the flashing lights for 1 to 2 seconds before the gates begin to come down. The gates reach the full down position approximately 7 to 8 seconds after the initial light activation. After determining these times, I ran my locomotive at top track speed, in my case 12 mph, through the crossing and noted the location where it was 10 seconds away from the crossing. This location is where I installed the initial detection photocell on each side of the crossing. While this time is dramatically shorter than the prototype, I felt it was a good compromise that provided adequate warning while not triggering the crossing circuit too early. The crossing circuit release photocell was placed 2" past the grade crossing, which allows the gates to come up shortly after the last car of the train clears the crossing.

I soldered 22AWG wire to each photocell and used 1mm heat-shrink

⑮ The four-position Phoenix contact fixed terminal block can accommodate wire sizes 16-26AWG in four individual blocks.



⑯ Each wire resistor and LED wire from the crossing is inserted into the correct location on the terminal block and tightened. Tom used .060" styrene sheet to make mounting brackets for the blocks.

tubing to prevent the legs of the photocells from touching ⑬. I used 3⁄64" heat shrink tubing to cover both of the soldered connections. Next I drilled a 9⁄64" hole between the ties at the proper locations to insert the photocells and again inserted a drinking straw into the holes after enlarging them from below. I inserted the photocells and used a small amount of white glue to hold them in place flush between the ties ⑭. I found a convenient location to mount the Grade Crossing Pro to the benchwork under the grade crossing and attached it with screws. Next, I attached the wires from the photocells to the Grade Crossing Pro as indicated in the instructions.

With the photocells connected to the Grade Crossing Pro, I connected the 9V DC power supply wires to the unit. Next, I connected the wires from the Tortoise that operates the gates to the appropriate location on the Grade Crossing Pro. Once I had all the wires connected, I tested the operation of the unit by covering the approach photocell, and the gates came down. I adjusted the sensitivity of the photocells following the instructions, and everything worked perfectly.

Wiring the lights

The instructions in the Grade Crossing Pro indicate that the two red wires and two yellow wires from the LED lights in the crossing signal need resistors installed before the wires are attached to the Grade Crossing Pro. The resistor value required for 12V DC operation is specified at 470Ω, 1⁄4W, which I purchased from a local electronics store.

I found a four-position Phoenix contact fixed terminal block available through Mouser Electronics. The terminal blocks accommodate wire sizes 16-26AWG in four individual blocks with a screw terminal to tighten the wires in each block ⑮. The blocks are similar to the ones on the Grade Crossing Pro and allowed me to add the resistors to each wire without having to solder the connections.

To make a mounting bracket for the terminal blocks, I used a piece of .060" styrene cut to the height of the block and ¼" longer on each side. I drilled mounting holes in the styrene and four additional holes to allow the pins to pass through from the bottom of the block. I then used cyanoacrylate adhesive (CA) to attach the block to the styrene. Once the adhesive dried, I bent the two outside pins over to help hold the terminal block to the styrene and cut the middle two pins off flush. I mounted the terminal block below the grade crossing signals.

I soldered the resistors to short pieces of 28AWG wire color coded red or yellow for each LED light wire. Next, I soldered two of the same color wires with the resistors into a single pigtail wire that would attach to the Grade Crossing Pro. Once I had all the resistor pigtail wires soldered, I inserted each resistor wire into the correct location on the terminal block with the LED wire from the crossing signal and tightened the screw ⑯. I had to solder the common white wires from the signals to another piece of wire to make it long enough to attach to the DC power supply point.

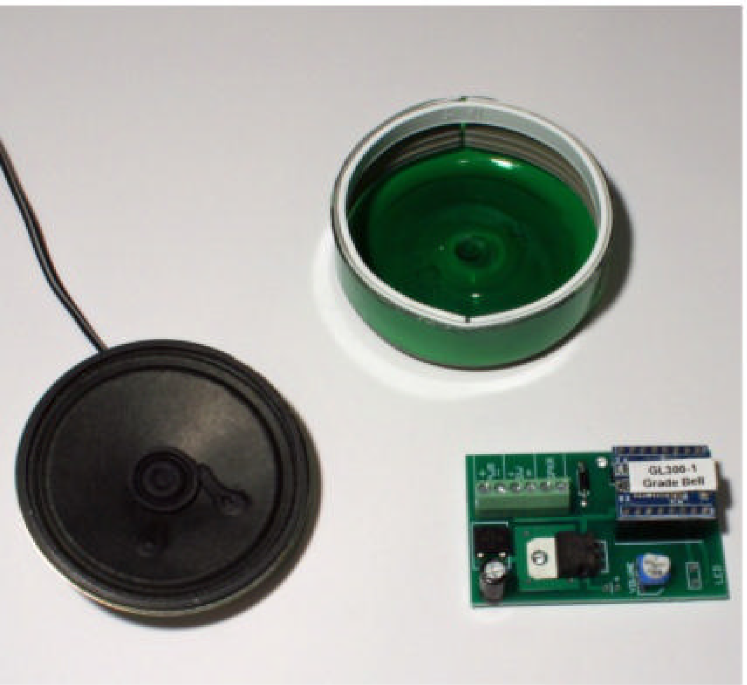
Installing the bell module

The final step in the installation is connecting the GL Sound Module to the Grade Crossing Pro. I also ordered a 2" speaker for the sound module from Logic Rail Technologies and used the bottom of a plastic bottle for the speaker enclosure. The diameter of the bottle was slightly larger than the speaker, so I glued two pieces of strip styrene, one each .040" and .060" thick, around the inside of the bottle to make a shelf to seat the edge of the speaker. I soldered two wires to the speaker connections on the back of the speaker and drilled a hole in the side of the bottle to pass the wires through when I glued the speaker to the enclosure ⑰.

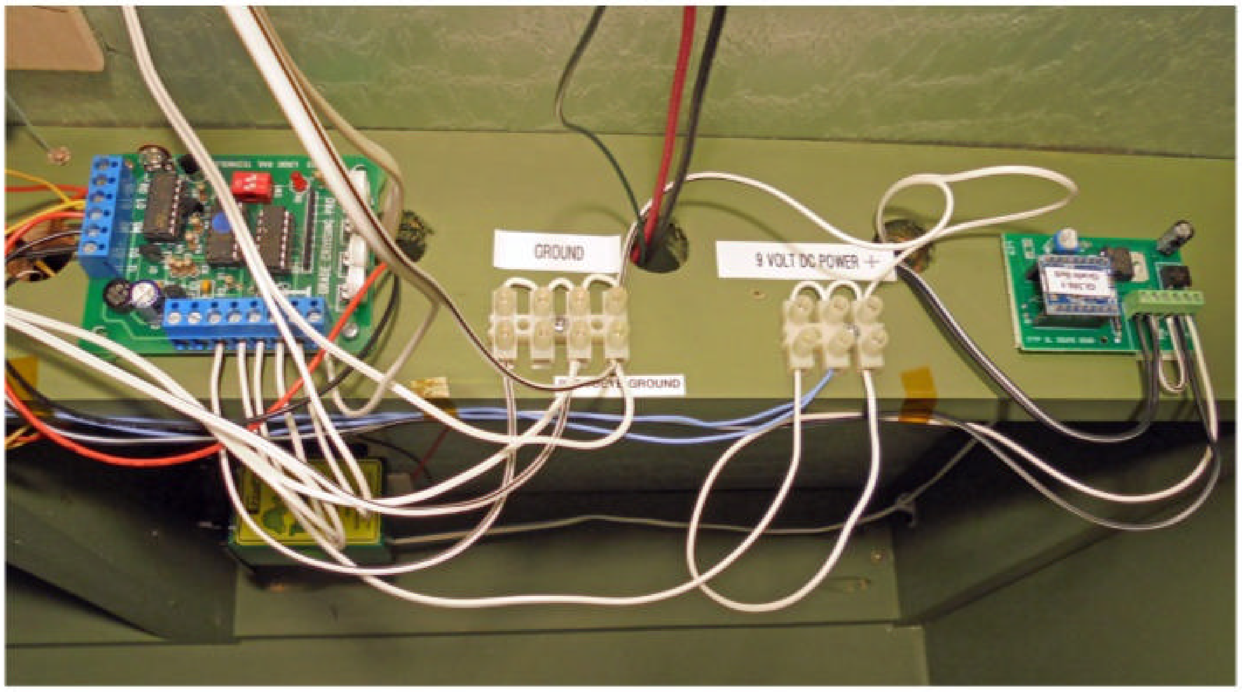
I mounted the bell module and the speaker enclosure to the benchwork under the layout near the Grade Crossing Pro using double-sided foam tape. I connected the wires to the bell module following the instructions that were included in the Grade Crossing Pro. I used a control on the sound module to adjust bell's volume. The complete grade crossing electrical component assembly is shown in ⑱.

Ready for service

Now as the trains approach the Sawyer Road grade crossing on my



⑰ The grade crossing bell includes the sound module and speaker. Tom used the bottom of a plastic bottle for the speaker enclosure.



⑱ This below-layout view shows the finished grade crossing electrical component assembly. From left to right is the Grade Crossing Pro, electrical distribution blocks, and the ITT Products GL Sound Module. The bell speaker is mounted on the back side of the benchwork.

layout, the grade crossing lights flash, the bell rings, and the gates come down, replicating what happens every day on the GNRR. Having an operating grade crossing not only adds a realistic operating feature to my layout, but also requires switch crews to work around not blocking the grade crossing as they switch the industries near the crossing.

Installing an operating grade crossing isn't difficult, but it does take time and patience. Just one installation will add plenty of action, sound, and light to a scene. While each grade crossing installation is different, I hope that some of my tips and techniques will assist you with your own operating grade crossing signal installation. MR

Thomas Klimoski and his wife, Diane, live in the Northeast Georgia Mountains. Tom's Georgia Northeastern model railroad was featured in Model Railroad Planning 2016.

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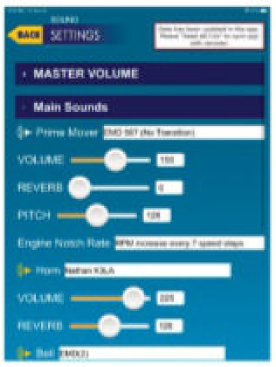
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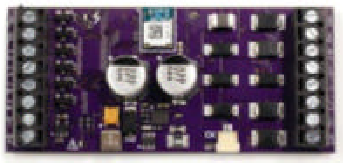

Dimensions: 69 x 30.5 x 14mm
Max. Motor Stall Current: 4A
Max. Function Current: 400mA (ea. output)
Function Outputs: 8
Audio Amplifier: 3 Watt, 8-Ohm Load
Sound Channels: 16

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Sound Channels: 16

Blunami
BLU-2200

453
Rio Grande

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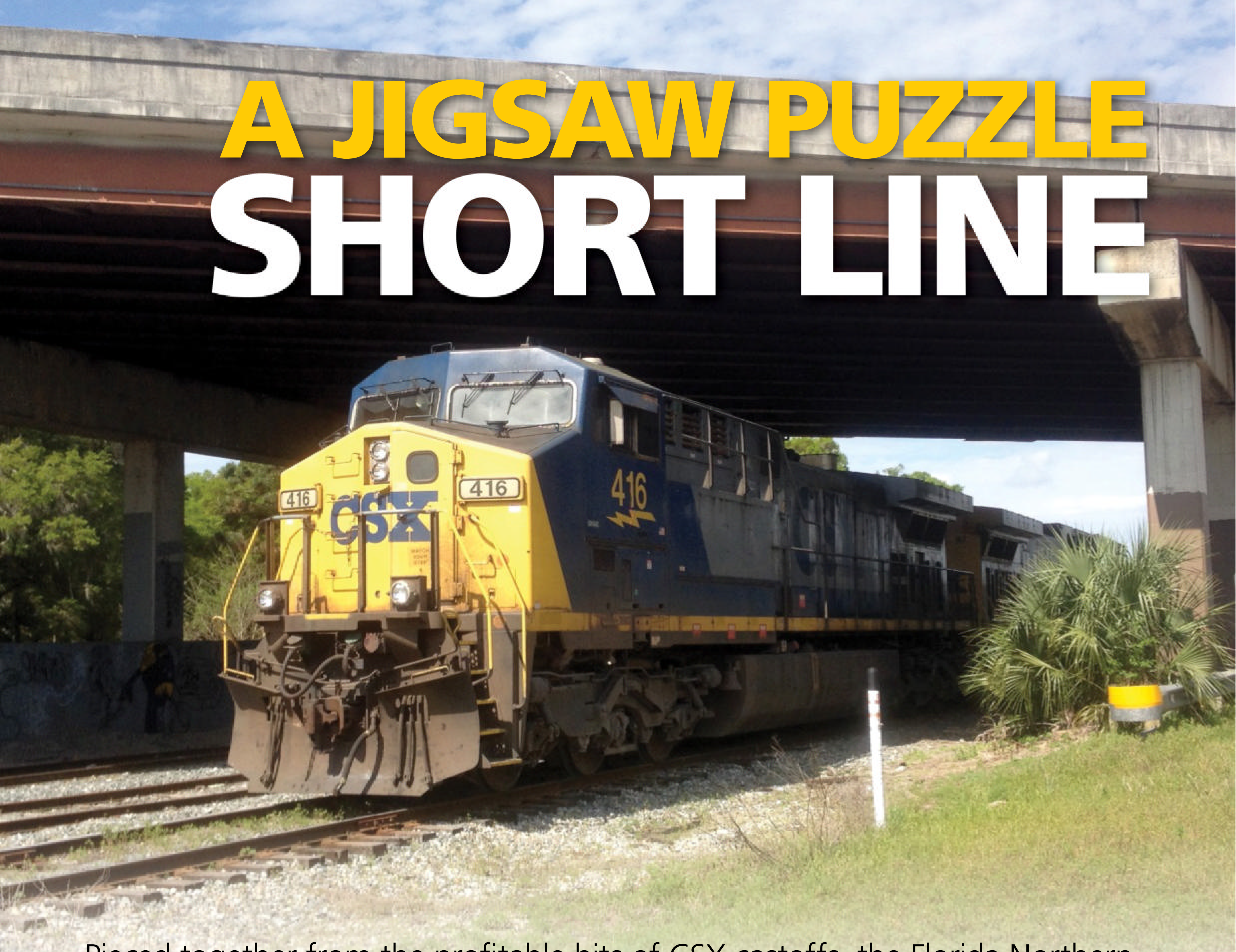
A JIGSAW PUZZLE SHORT LINE



ABOVE: CSX AC4400CW No. 416 crosses under Pine Avenue in Ocala, Fla., with a train of Ortner rapid-discharge hoppers bound for Southern Landscape Supply on the Florida Northern (FNOR). While these cars used to be interchanged between CSX and FNOR, in recent years an FNOR crew simply takes over operating the CSX train the short distance to the destination.

Pieced together from the profitable bits of CSX castoffs, the Florida Northern is an intriguing subject for a modern N scale track plan

By Christian Javier • Photos by the author

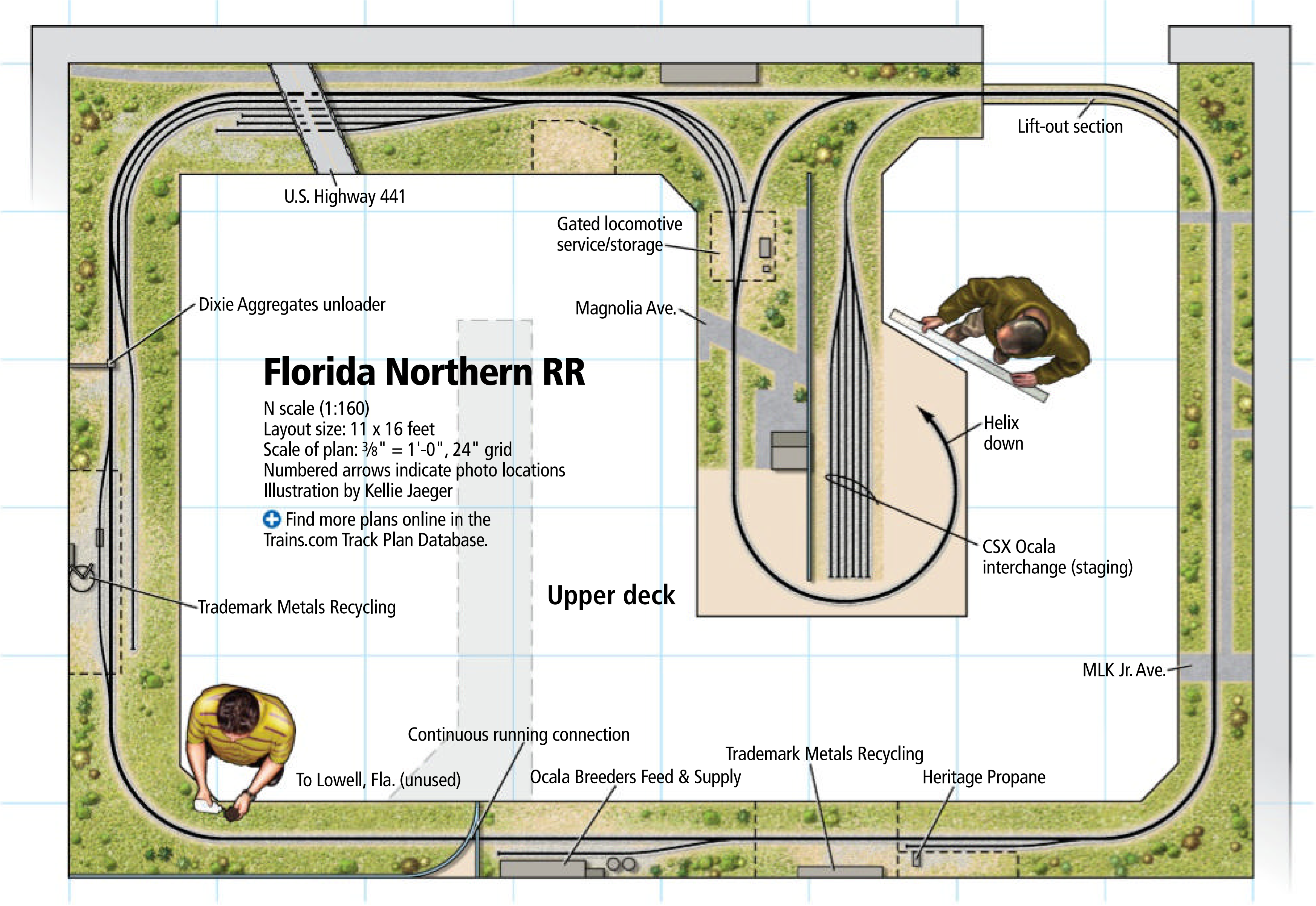
The formation of CSX in the 1980s led to abandonments, embargoes, and scrapping of many Florida rail lines. Routes of the former Seaboard Air Line (SAL) and Atlantic Coast Line (ACL) that were previously vital became redundant and unprofitable. A few, though, were sold to short lines and regional carriers. One buyer of such trackage was the Pinsly Company. Since the late ’80s, Pinsly has kept alive four of the five lines it purchased from CSX.

While not the busiest line on Pinsly’s Florida network, the Florida Northern RR (FNOR), based out of the central Florida town of Ocala, is well suited for modeling. The way tracks were abandoned left just the profitable bits and pieces behind, meaning the Florida Northern has some challenging track arrangements to incorporate in a plan. Nevertheless, I was able to place all of the important layout design elements in a reasonable space, with all currently active industries represented.

About the railroad

The current extent of the line includes three major portions: the Lowell Branch, the Candler Branch, and a small stretch of the former Silver Springs, Ocala & Gulf (SSO&G). All of the portions were under ACL’s control for most of their existence. The original line started in Alachua, Fla., extending through Gainesville, Ocala, and Leesburg, eventually reaching Croom, Fla., where it joined another ACL mainline between High Springs and Vitis Junction. The line, part of the Ocala district, was the route of the famed *West Coast Champion* out of St. Petersburg.

As it currently exists, the FNOR operates about 10 miles north out of Ocala to


Lift-out section
U.S. Highway 441
Gated locomotive service/storage
Dixie Aggregates unloader
Magnolia Ave.
Helix down
CSX Ocala interchange (staging)
Trademark Metals Recycling
Upper deck
MLK Jr. Ave.
Continuous running connection
Trademark Metals Recycling
To Lowell, Fla. (unused)
Ocala Breeders Feed & Supply
Heritage Propane

Florida Northern RR

N scale (1:160)
Layout size: 11 x 16 feet
Scale of plan: ⅜" = 1'-0", 24" grid
Numbered arrows indicate photo locations
Illustration by Kellie Jaeger

➕ Find more plans online in the Trains.com Track Plan Database.

Lowell, 10 miles south to Candler, and less than 5 miles west to serve a few industries on the former SSO&G. The busiest portion today is the Candler branch, though there used to be substantial traffic from two mines in Lowell. Today, the Lowell branch is essentially abandoned past the FNOR's yard.

Since 1989, traffic on the FNOR has shrunk. In the early days, long trains of recycled oil, lumber products, aggregate, scrap metal, propane, and more rolled on FNOR's rails. But by 2015, it became rare to see a train longer than 10 cars.

I chose an intermediate era to maintain medium-sized trains for switching but also to make sure there wasn't too much to model. For instance, modeling the Lowell branch would have required much more space. On my track plan, the abandoned Lowell branch lead leads to an optional continuous-running loop.

The motive power used by the Florida Northern in 2004 was a pair of former Atchison, Topeka & Santa Fe Cleburne, Texas-rebuilt CF7s. Power is pooled between Pinsly's short lines throughout Florida, so locomotives lettered for Florida Central and Florida Midland can also be seen. Today, for example, a GP9 and GP18, both lettered for Florida Central, have replaced the CF7s. One of the last CF7s on Pinsly's system awaits its fate in a storage track in the Ocala yard.

Operating the FNOR

On the prototype, the day begins with picking up interchange traffic from the CSX yard. Usually a single locomotive can handle the tonnage for the day. These cars are pulled out of the yard into the switchback connection between the SSO&G branch and the FNOR wye, then backed north into the yard. Cars are separated into their destinations by the branch they are destined for.

Repurposed Coalveyors and high-side gondolas for the Trademark Metals Recycling facility at the north end of the FNOR yard are switched first. Then, cars for the former SSO&G – including covered hoppers of feed for Ocala Breeders Feed & Supply, 33,900-gallon LPG tank cars for Heritage Propane, and long mill gons for a smaller Trademark Metals recycling facility – are taken down the branch in a reverse move due to the lack of a runaround.

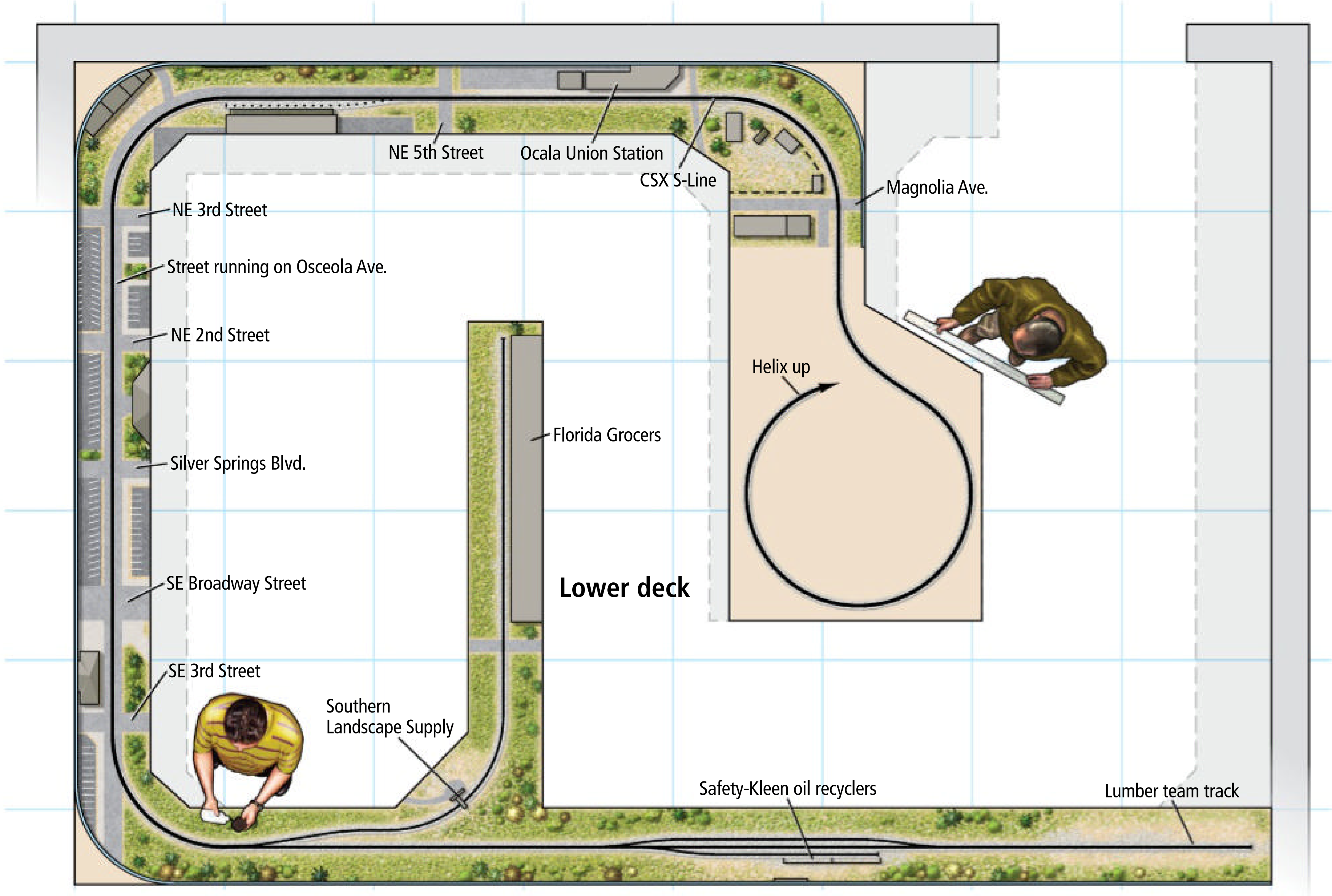
Finally, the Candler branch train heads south. Just beyond the wye, the FNOR crosses the double track super-siding of the CSX S-line, right next to the former SAL/ACL union station. Only a few hundred feet later, the FNOR enters a long section of street running on Osceola Avenue through downtown Ocala. This is an impressive modeling feature I wanted to accommodate as close to the prototype as possible, so an entire wall is dedicated to this scene, with streets prototypically spaced crossing Osceola Avenue.

Scenes become a little compressed as we exit the street running. The Silver Springs industrial branch is one such example. Here, the primary industry is Southern Landscape Supply, so the focus is on that industry. Some trackwork around Florida Grocers and the elimination of a disused building supply industry located at the junction of the mainline and the industrial spur are the sacrifices made to create a better representation of Southern Landscape Supply.

A long track is needed to receive the numerous CSX Ortner hoppers that are

Track plan at a glance

Name: Florida Northern RR
Scale: N (1:160)
Size: 11 x 16 feet
Prototype: Florida Northern RR
Era: 2004
Locale: Central Florida
Style: double-deck walkaround
Mainline run: 88 feet
Minimum radius: 18"
Minimum turnout: No. 6
Maximum grade: none


NE 5th Street
Ocala Union Station
CSX S-Line
Magnolia Ave.
NE 3rd Street
Street running on Osceola Ave.
NE 2nd Street
Helix up
Florida Grocers
Silver Springs Blvd.
SE Broadway Street
Lower deck
SE 3rd Street
Southern Landscape Supply
Safety-Kleen oil recyclers
Lumber team track

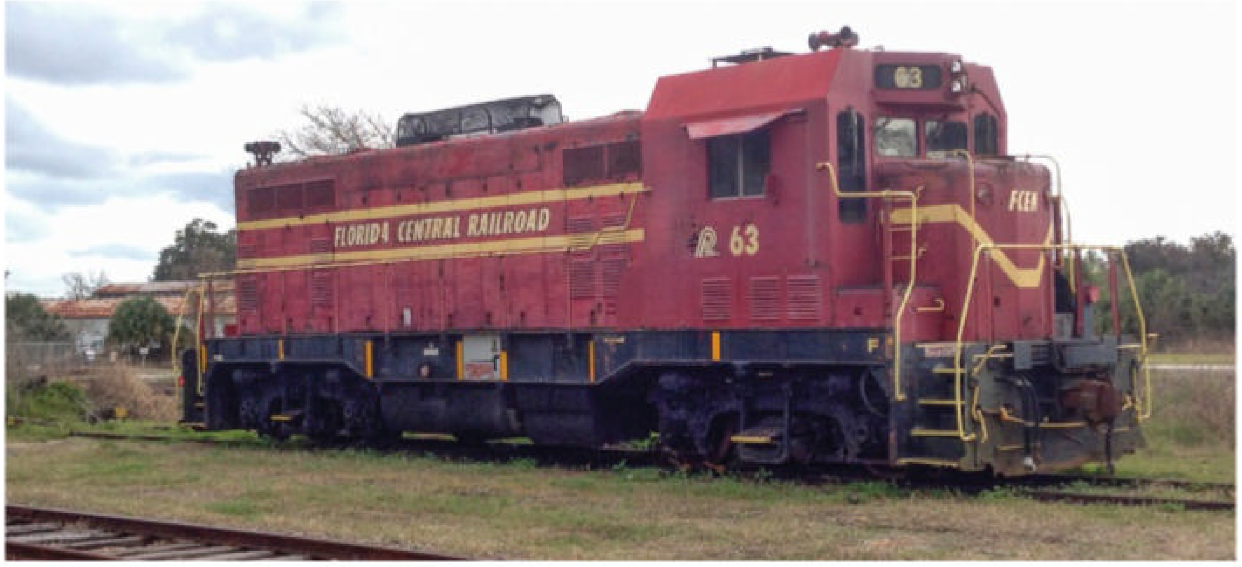
delivered here, filled with decorative volcanic cinders, pebbles, and other aggregate products. These are unloaded into an under-track bay where a conveyor belt transloads them into a small dump truck. The truck then makes the final delivery to piles on the property, less than a quarter mile away.

Florida Grocers occasionally receives 60-foot high cube boxcars which are filled with dry food products that don't require insulation or refrigeration. The final two industries at the end of the line include an oil recycling plant and a team track for unloading centerbeam flatcars of wrapped lumber.

Service to the oil recycling facility and the previously mentioned Southern Landscape Supply is pretty regular. But Florida Grocers and the lumber team track are served less frequently. Today, the team track appears entirely disused, but in 2004, four or five cars were often jammed into the paved section at the end of the line.

After switching all the branchline industries, the FNOR crew gathers the return cars and brings them back to the CSX interchange yard. They usually ending the day by tying down the power at about 6 p.m.

An entirely separate train that can occasionally be seen on the Florida Northern is the CSX train that brings an entire block of Ortner hoppers filled with rock to the Dixie Aggregates unloading bay just north of the FNOR yard. Once, FNOR's own CF7 pair would handle the train by taking it from the CSX interchange, but later FNOR crews began to simply swap with the CSX crew and keep the CSX power on point.

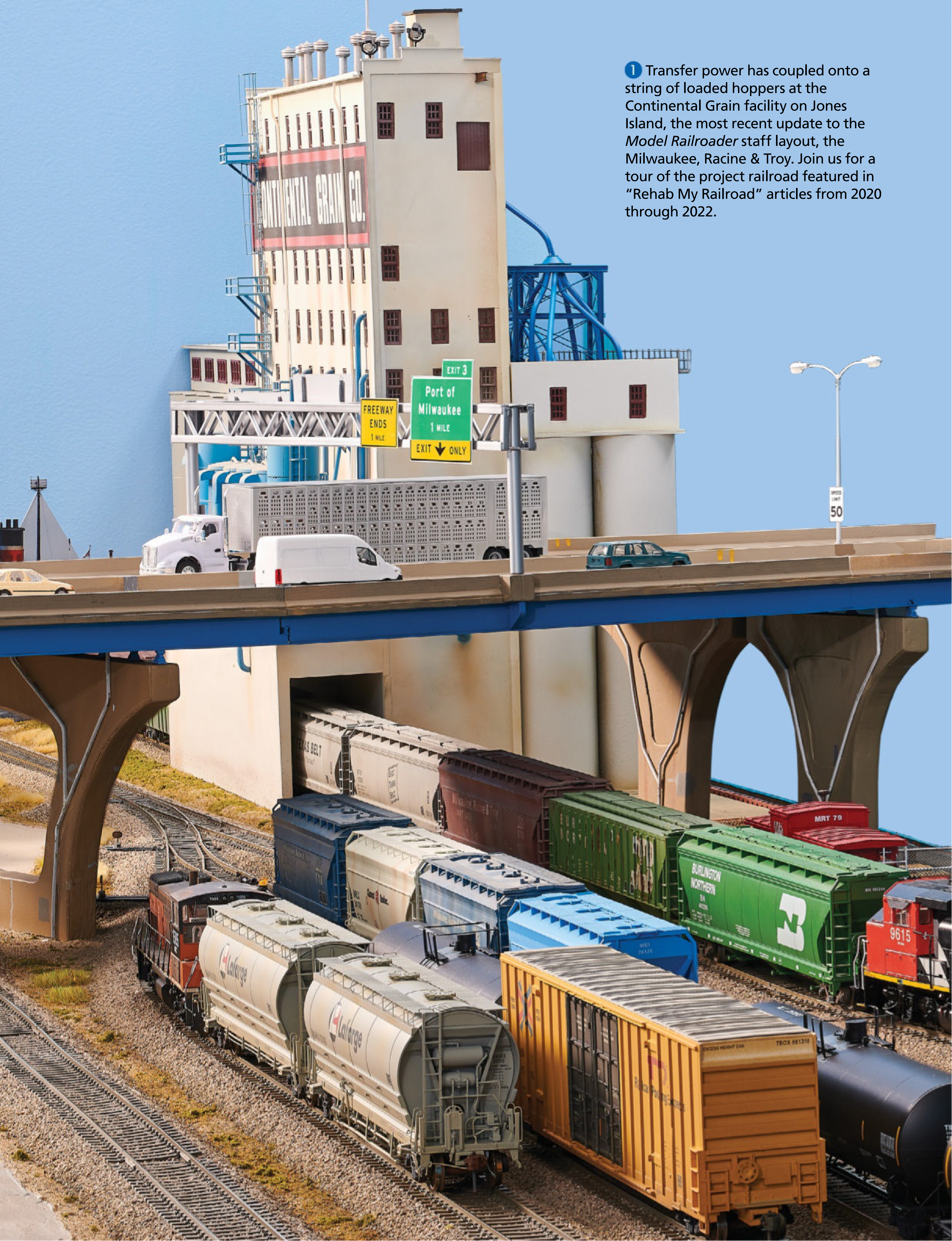

FLORIDA CENTRAL RAILROAD
63
FCEN

Florida Central No. 63, on loan to the Florida Northern, sits in FNOR's Ocala yard on March 1, 2015. The former Atchison, Topeka & Santa Fe CF7 was the primary motive power for FNOR at the time. Florida Northern and Florida Central are both owned by the Pinsly Co.

That small railroad feel

In my opinion, the Florida Northern is a fantastic piece of railway to model. Rarely does a modern short line consist of a single line branching from an interchange and following a simple path through the towns and industries it serves. It's more often parts of old wyes, switchbacks to reach an interchange, and the short line's own branches from previous junctions. All of these form the Florida Northern's cost-saving character, and are reminiscent of other short lines in the United States. MR

Christian Javier lives in central Florida, not far from the FNOR's stomping grounds. His last MR byline was "Modeling the ACL's Palmetto Sub" in the July 2018 issue.


CONTINENTAL GRAIN CO.
EXIT 3
Port of Milwaukee 1 MILE
FREEWAY ENDS 1 MILE
EXIT ONLY
SPEED LIMIT 50
MRT 79
BURLINGTON NORTHERN
9615
Lafarge
Lafarge

① Transfer power has coupled onto a string of loaded hoppers at the Continental Grain facility on Jones Island, the most recent update to the *Model Railroader* staff layout, the Milwaukee, Racine & Troy. Join us for a tour of the project railroad featured in "Rehab My Railroad" articles from 2020 through 2022.

Escape from Jones Island

The most recent addition to *Model Railroader*'s HO scale Milwaukee, Racine & Troy has a prominent position

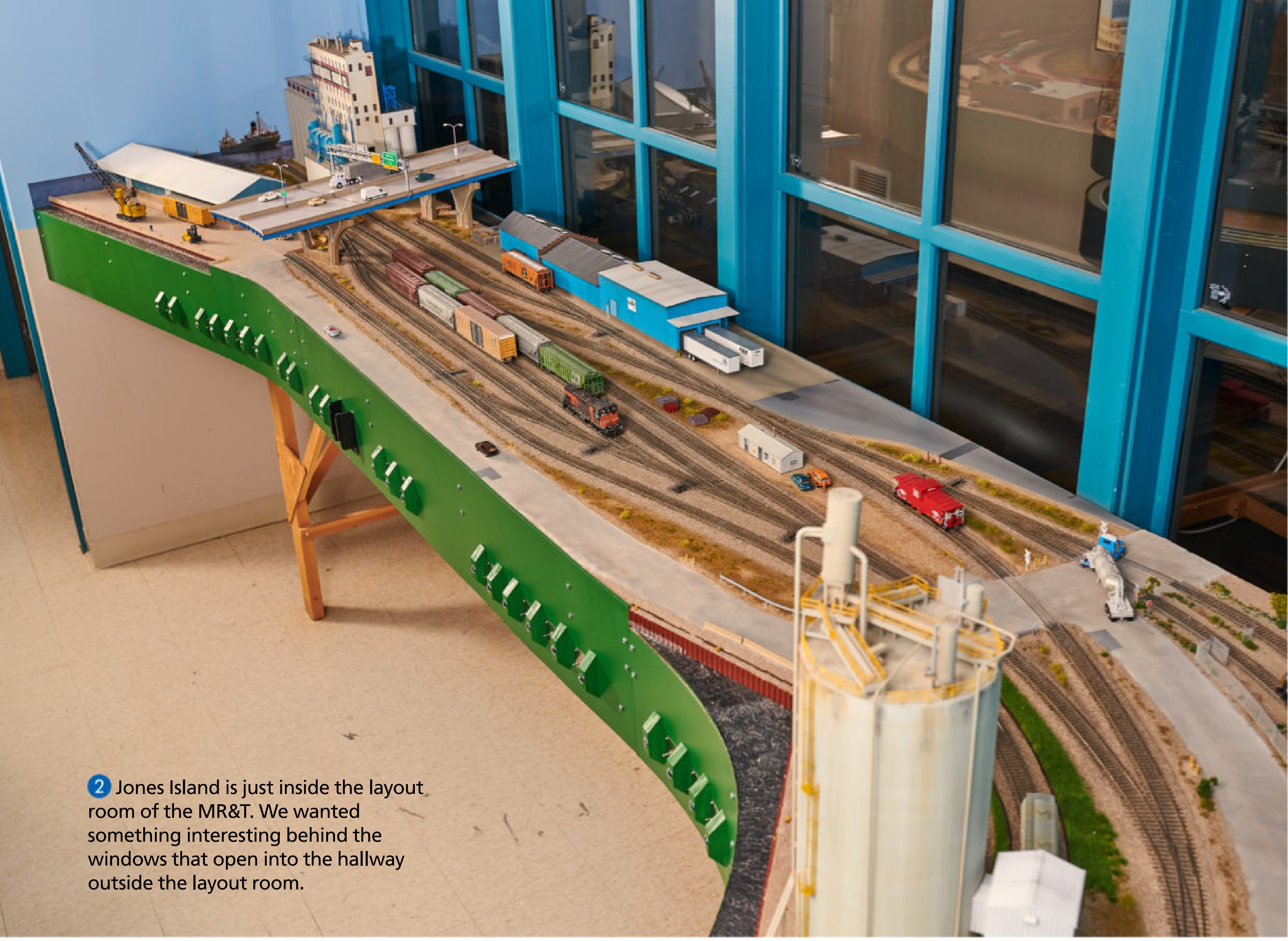
By Eric White • Photos by Connor Bruesewitz/Saturn Lounge

***Model Railroader's* staff layout,** the HO scale Milwaukee, Racine & Troy, was reborn in 1989 when Kalmbach Publishing Co., now Kalmbach Media, moved from downtown Milwaukee to the suburb of Waukesha. A purpose-built layout room tempted the editors, especially Andy Sperandeo, with a blank canvas, which was quickly filled with benchwork and track.

Over the years, scenery filled in the spaces between the track and backdrops, but one area, dubbed Kelly's Island on early plans, remained primarily plywood for decades. As it's in the front of the room visible from the hall through a bank of windows, the unfinished scene was begging to be completed. Many ideas were floated, but it was just before the COVID-19 pandemic hit that we finally started to do something about it.

Since this wasn't a new layout in an open space, it became another installment of the "Rehab My Railroad" series

9615
CN
9659
Cargill
Salt



② Jones Island is just inside the layout room of the MR&T. We wanted something interesting behind the windows that open into the hallway outside the layout room.

on Model Railroader Video Plus and in the magazine, starting in the October 2020 issue. To give us some direction, David Popp, now Trains.com director, switched the theme from a generic scene to one with prototype inspiration, and Kelly's Island (named for longtime MR managing editor Jim Kelly) became Jones Island, an actual place on Milwaukee's Lake Michigan waterfront.

Making it fit

We didn't have room to model Jones Island in its entirety, so David chose signature scenes and arranged them to fit the space we had. We had a head start, as Jim Kelly built a model of Continental Grain, an actual rail customer on Jones Island, for the original MR&T at our old downtown Milwaukee offices.

To this, David added the Port of Milwaukee General Cargo Terminal No. 2, Cargill Salt, U.S. Oil Jones Island Terminal, Holcim Cement (formerly LafargeHolcim), Kaszube's Park, and the I-794 overpass.

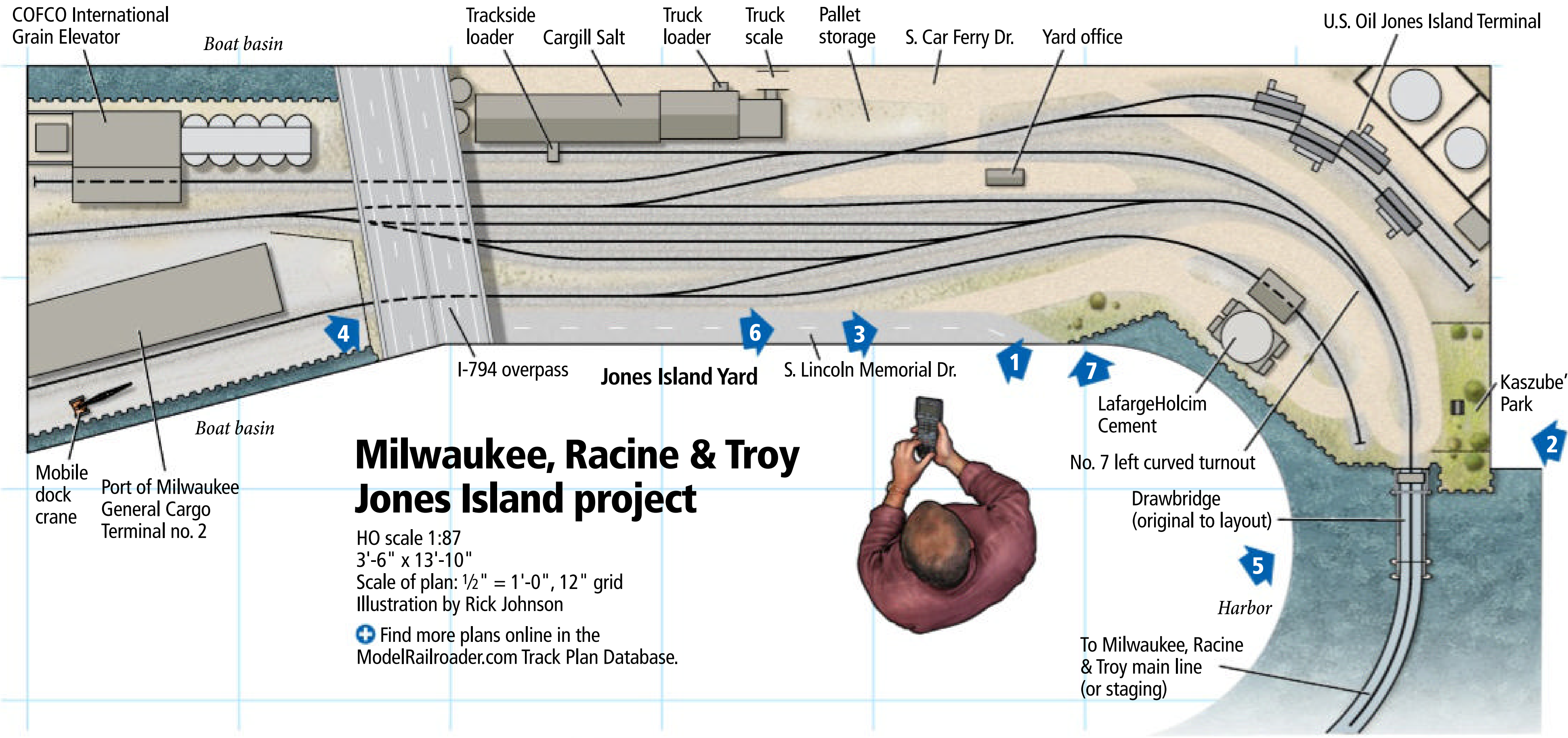
1505
Lafarge
LAFARGE

③ Switching is the focus of Jones Island, and this MR&T bandit is perfect for the job. Cody Grivno detailed and painted the locomotive. He explained how he weathered the Rapido hoppers in the November 2021 issue.

The project got off to a quick start in the summer and fall of 2019, and before long, we had the old track ripped up, along with much of the surface and even some of the benchwork to allow filming of construction techniques.

Mixing old and new

The original L-girders were left in place, and new joists, risers, and plywood sheathing were built under everything to the left of the yard throat. Most


COFCO International Grain Elevator
Boat basin
Trackside loader
Cargill Salt
Truck loader
Truck scale
Pallet storage
S. Car Ferry Dr.
Yard office
U.S. Oil Jones Island Terminal
4
I-794 overpass
Jones Island Yard
6
3
S. Lincoln Memorial Dr.
1
7
LafargeHolcim Cement
Kaszube's Park
2
No. 7 left curved turnout
Drawbridge (original to layout)
5
Harbor
To Milwaukee, Racine & Troy main line (or staging)
Mobile dock crane
Port of Milwaukee General Cargo Terminal no. 2
Boat basin

Milwaukee, Racine & Troy Jones Island project

HO scale 1:87
3'-6" x 13'-10"
Scale of plan: ½" = 1'-0", 12" grid
Illustration by Rick Johnson

⊕ Find more plans online in the ModelRailroader.com Track Plan Database.

of the track and turnouts are Peco code 83 North American style, except for a curved turnout behind the cement silo. That came from Wm. K. Walthers. The track is secured with caulk onto Midwest Products cork roadbed.

We also installed Rapido Rail Crew switch controls and magnetic uncouplers. The switch controls feature moving switch stand targets, which adds a bit of animation, and the uncouplers use electromagnets, so hard-to-reach sidings can be switched without the hassle of accidental uncouplings.

The layout at a glance

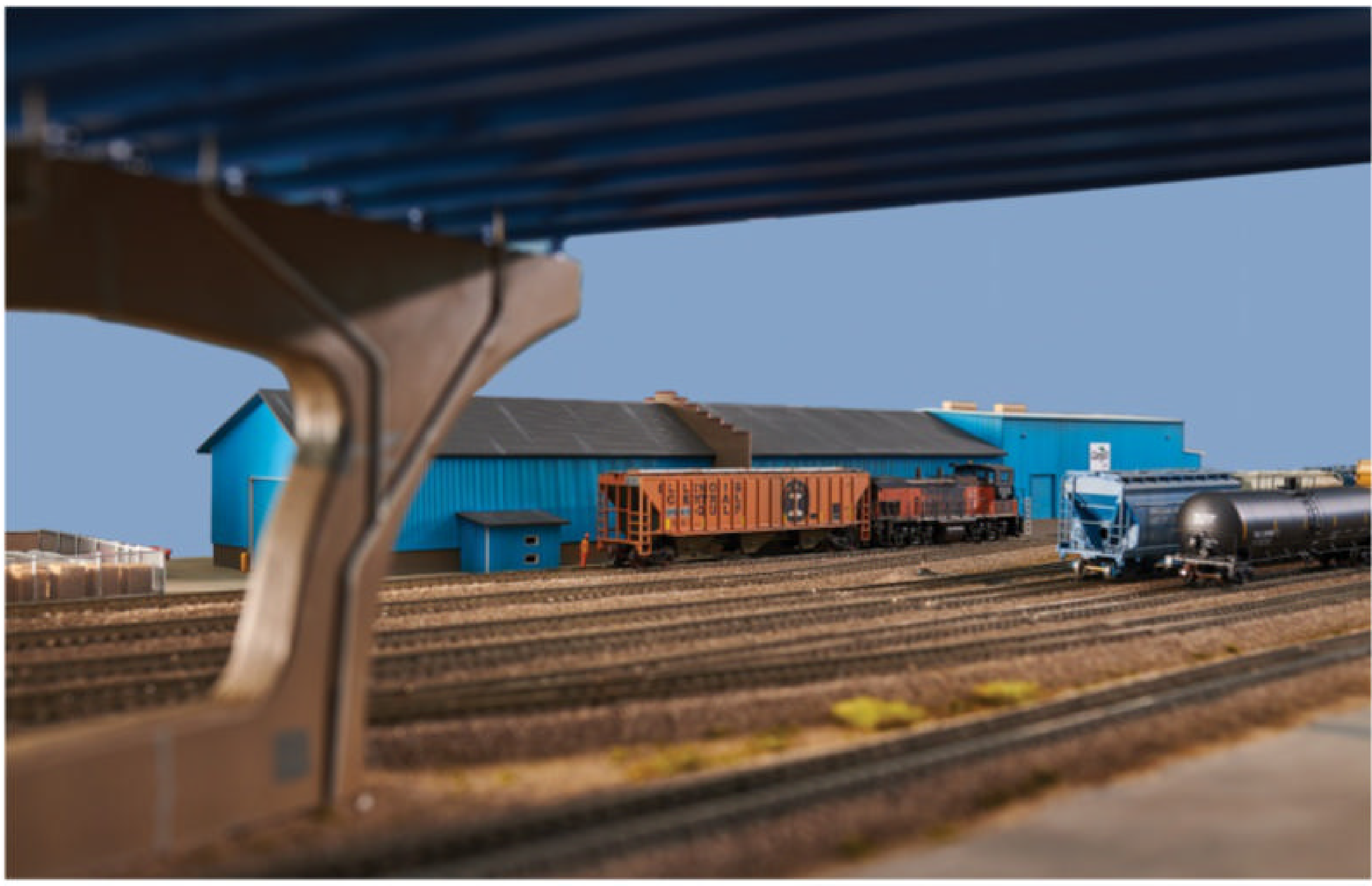
Name: Jones Island
Scale: HO (1:87.1)
Size: 3'-6" x 13'-10"
Prototype: Port of Milwaukee
Locale: Milwaukee waterfront
Era: present day
Style: shelf
Mainline run: none
Minimum radius: 24"
Minimum turnout: no. 6
Maximum grade: none
Benchwork: L-girder
Height: 49"
Roadbed: cork
Track: code 83
Scenery: extruded-foam insulation board, Sculptamold
Backdrop: photo
Control: NCE Digital Command Control

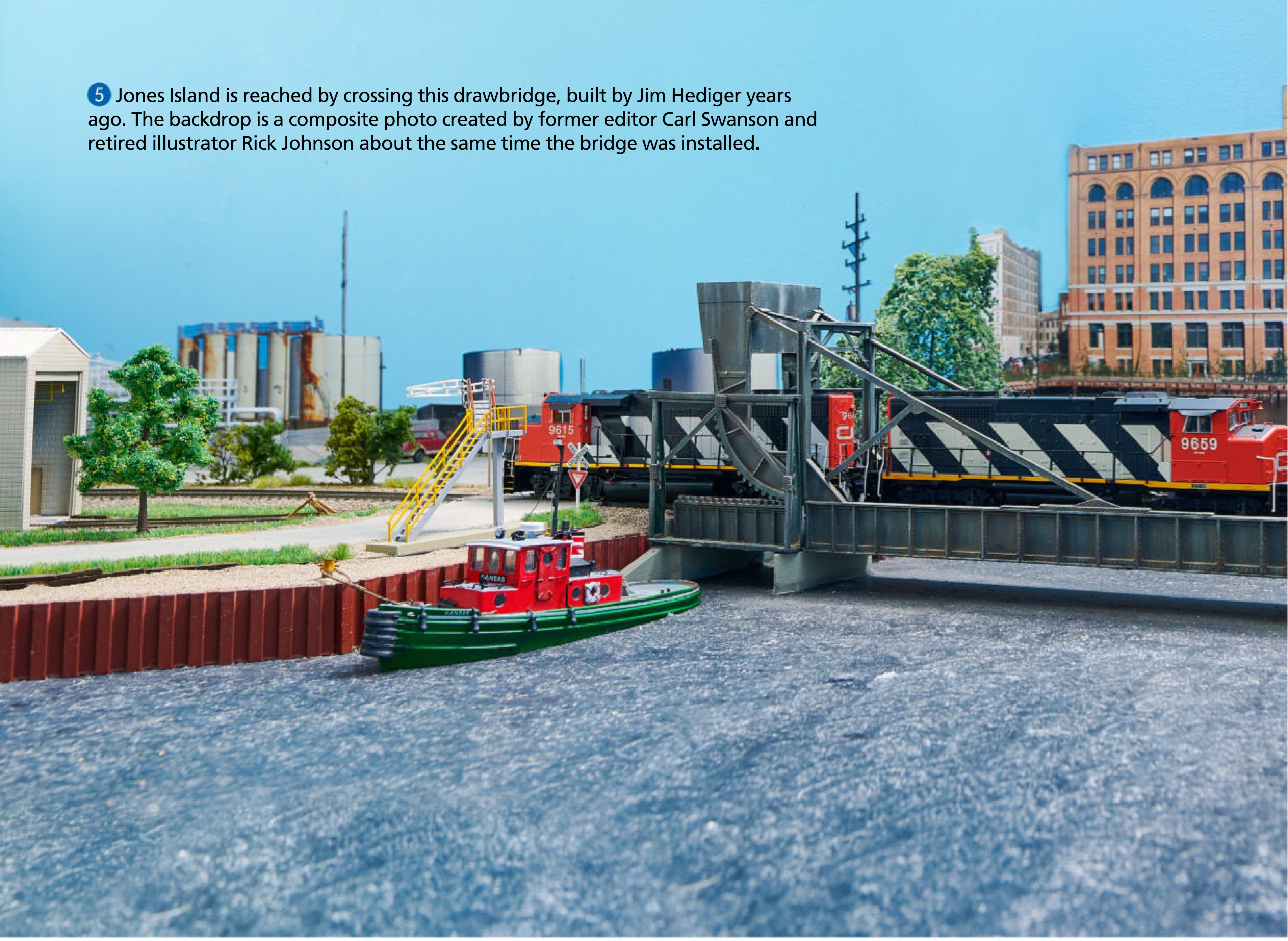
Structures

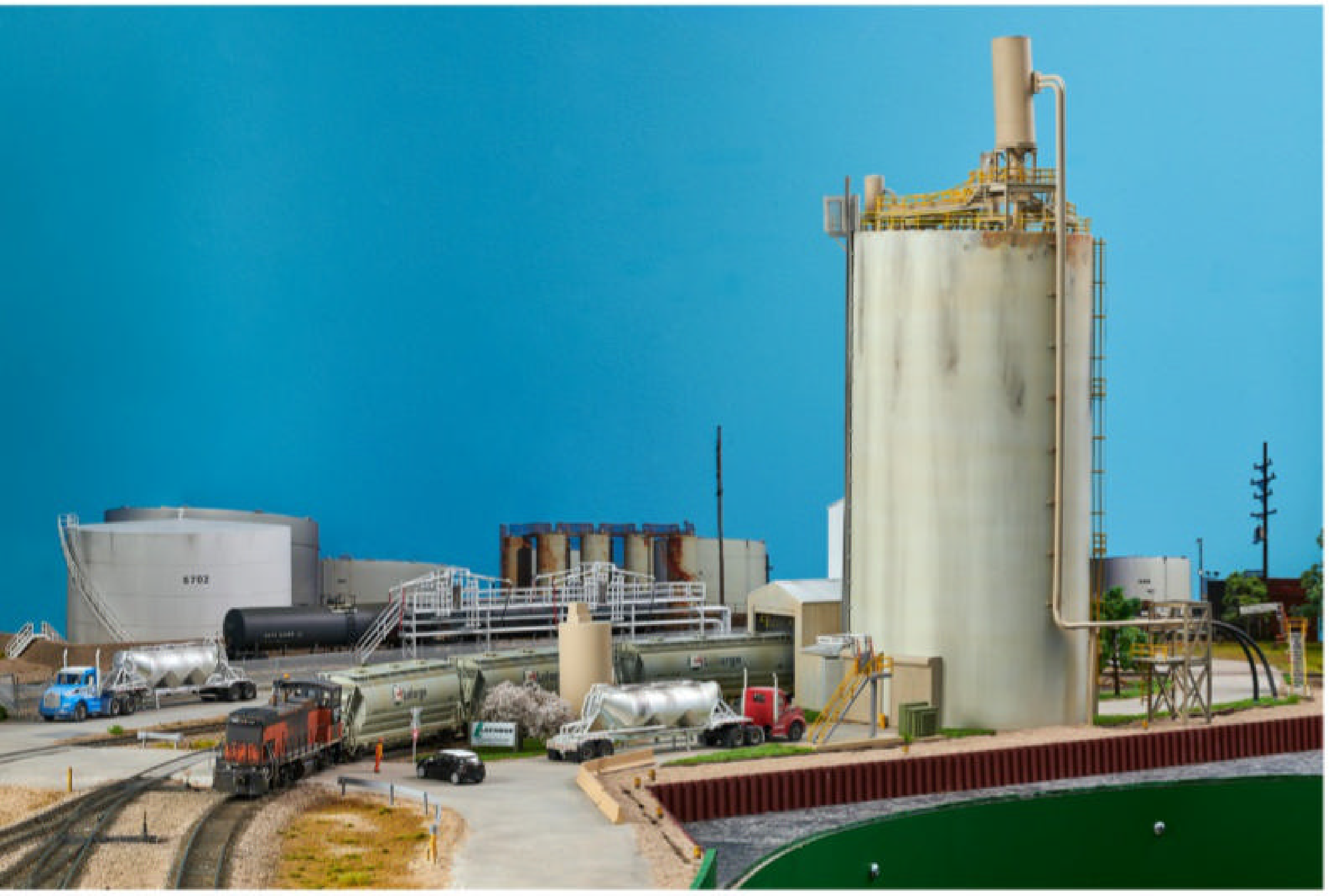
The structure projects took the most time. We got started on these about the time everyone was sent home in response to the pandemic, so projects that would have been completed in the *Model Railroader* workshop became home projects in several staff members' basements.

Cody Grivno took on the rehabilitation of Jim Kelly's Continental Grain. After about 40 years, parts were beginning to fall off. In addition, its original orientation on the old layout had it acting as a background structure. With its movement to a place right in front of the window, Cody added details to what had been the hidden back of the building.

Cody also built the Cargill Salt terminal and the yard office. We made extensive use of Google Maps to get a feel for the layout of the buildings we were modeling, as well as making site visits to take photographs. Former MR editor Carl Swanson used his contacts at the Port of Milwaukee to get us permission to visit


④ The Interstate 794 overpass, built by Trains.com producer Ben Lake, lends a moody ambiance to the yard scene, featuring Cody Grivno's Cargill Salt in the background. Cody painted and weathered the former Illinois Central Gulf covered hopper for this project.


⑤ Jones Island is reached by crossing this drawbridge, built by Jim Hediger years ago. The backdrop is a composite photo created by former editor Carl Swanson and retired illustrator Rick Johnson about the same time the bridge was installed.


⑥ Editor Eric White built the Holcim cement silo using a section of PVC pipe for the main cylinder. The U.S. Oil Terminal in the background is a combination of several Walthers kits. Former editor Carl Swanson took the photo used for the backdrop.

some of the sites, including the Holcim Cement silo. I worked on that project, along with the adjacent Koszube's Park and our relocated U.S. Oil terminal.

David built the Port of Milwaukee General Cargo Terminal No. 2, including a cargo crane with a raised operating cab. Ben Lake built the I-794 overpass, using a variety of materials including custom printed signs and road surfaces.

Stories about the cement silo, Cargill Salt, and rehab of Continental Grain, among others, appeared in various issues in 2020 and 2021 under the Rehab My Railroad department. There are also multiple videos on these projects available on Trains.com.

Backdrops

Backdrops on the layout are from photos taken by Carl Swanson. A division of Kalmbach Media, Saturn Lounge/Digital Color, printed the images on one of their proof printers. I used a bit of leftover sky blue that seemed to match what was on the walls to hide scuff

next load
any road
TBOX
661318
TTX
Railcar Pooling Experts

marks and other discolorations that appeared over the years, then used 3M Super 77 spray adhesive to stick the images to the walls at the ends of the layout.

Scenery

The scenery consists mostly of ground cover. We used plenty of Woodland Scenics products from ground foam turf to Fine-Leaf Foliage, as well as grass mats and grass tufts from Busch, Noch, and Walthers. We were able to preserve the water feature around the drawbridge, but the portions of the layout around the cargo and grain terminals needed new pours of Woodland Scenics Murky Deep Pour resin water. Cody and David described the process in the March 2021 issue.

One of the fun aspects of building the cement silo was the landscaping around it. A previous manager was an avid golfer, and had a putting green and sandtrap installed on the property. To get the right look for the grass, I used a Busch grass mat with longish grass flocking. It lacked the manicured look I wanted for the lawn, so I used my electric beard clipper to trim the grass to a more realistic level. And yes, the shaver still works on my beard.

Next door to the silo is Kaszube's Park. It's the site of the last commercial business on the island, a tavern that supported what was once a thriving residential area. Adding another bit of green was another fun diversion from the gray and tan of the rest of the layout.

Tied up next to Kaszube's Park is the Great Lakes Towing tugboat *Kansas*. The model represents a 1950s vintage U.S. Army tug, a bit smaller than anything in Great Lakes' fleet. I chose the name *Kansas* because there wasn't a boat so named by Great Lakes, and in honor of my mother and maternal grandmother, who were natives of the Sunflower State. You can read about it in the February 2021 issue.

Rolling stock

Cody worked on several rolling stock projects for the railroad. A story about a covered hopper in salt service appeared in the June 2021 issue. Cody also prepared our fleet of oil tank cars, adding weathering and double-shelf couplers in the April 2021 issue, and detailed a diesel to serve the industries on the layout in the September 2021 issue.

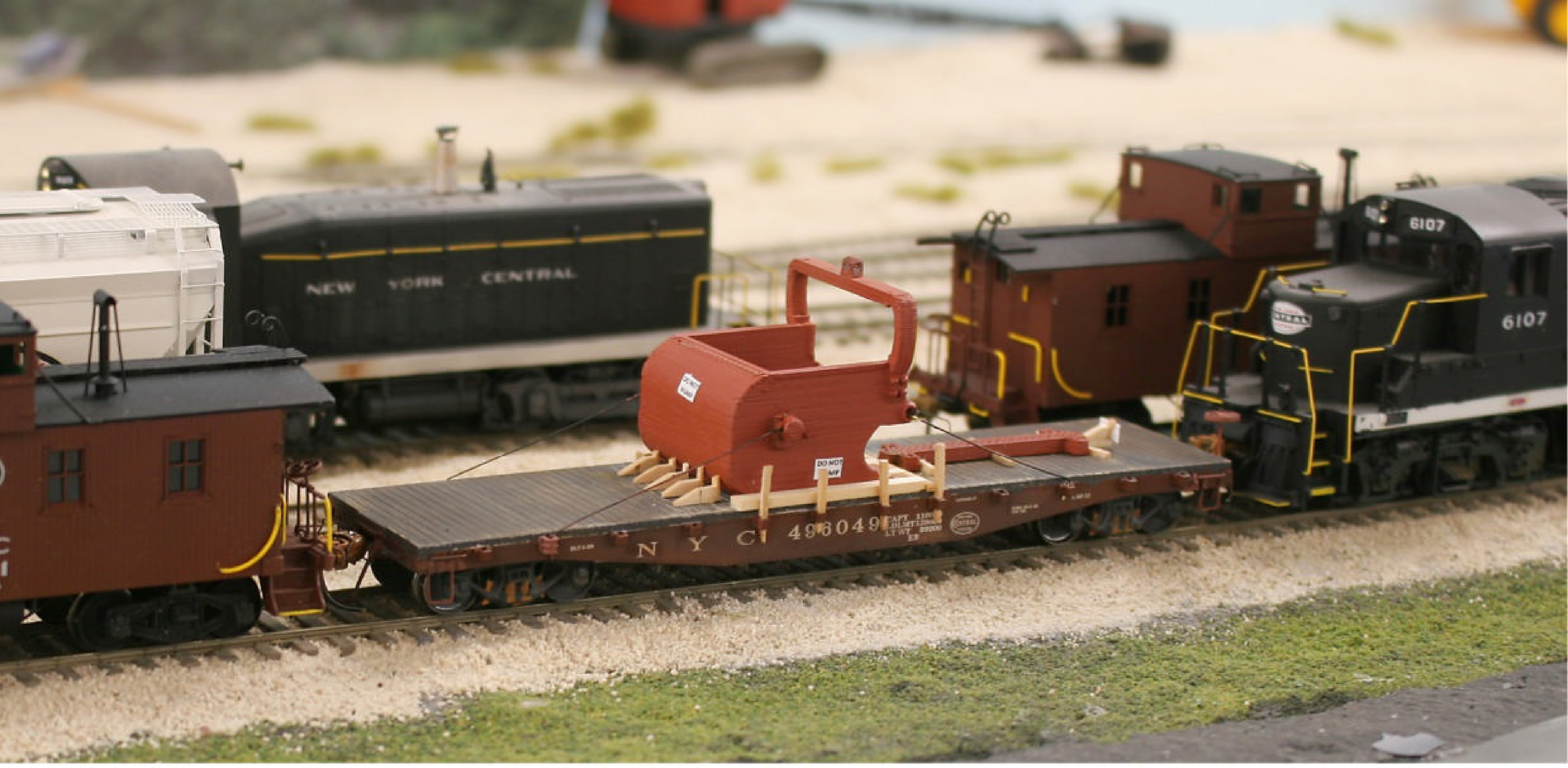
Operations

We're still working on getting the MR&T ready for operation, but already we can see that Jones Island is going to be a fun spot to operate. It will likely be one of those jobs where an individual or two-person crew can spend the greater part of the session spotting and pulling cars, and breaking down and building transfers either to Marquette Yard or staging.

Leaving the island

Jones Island was intended to be a relatively quick project, but with the pandemic, it seemed like we were stranded there for a while. Finally, after a little more than two years, we were able to call the project finished, and finally make our escape. Future visits to the island should be much more fun! MR

⑦ The crew spots a covered hopper loaded with salt in the Jones Island yard. Cody Grivno kitbashed the yard office from a Pikestuff kit.



An image in a Christmas card inspired Mont Switzer's latest modeling project. Follow along as he shares how he detailed, weathered, and added a load to this HO scale 42-foot fish-belly flatcar.

Upgrade a ready-to-run flatcar

New details, weathering, and a load enhance this HO scale car

By Mont Switzer • Photos by the author

Most of the time the inspiration for our modeling projects comes from something we see while standing trackside, reading a prototype or model railroad publication, or looking at similarly themed websites. The idea for this project was sparked by a Christmas card. Longtime railfan friend, photographer, and photo collector John C. LaRue sent me a card that included a New York Central (NYC) flatcar in the scene. After taking a closer look at the car, I thought it looked similar to the Red Caboose (now InterMountain Railway Co.) HO scale 42-foot fish-belly flatcar.

After finding the model, I began looking for better photos of the prototype. Once again John came through. He sold me a print of NYC S-496296. According to the April 1957 *Official Railway Equipment Register*, 245 of the 300 cars from NYC's 496000 through 496299 series were still in service. Included in that range was No. 496049, the number on my model.

Further examination of the model revealed the car doesn't match the prototype exactly. However, all of the key pieces were there, or there was room to install them. With some extra details, weathering, and a load, the flatcar would be a great fit for my HO scale freight car fleet.

Weathering the deck

The flatcar deck was molded in beige plastic. The color was so bright and uniform that it was the first thing a viewer would notice about the model. Uncertain if trying to removing the deck would damage the car, I decided to weather it instead.

First, I applied Rust-Oleum Painter's Touch 2X Flat Gray Primer spray paint (No. 249088). Full coverage of the plastic wasn't critical.

The next day I overcoated the gray with Rust-Oleum Painter's Touch 2X Flat Black Primer (No. 249846). Again, complete coverage wasn't necessary. However, I made sure the black filled in the crevices between the boards.

I then sanded the deck with 80-grit sandpaper. I attached the sandpaper to a 2 x 2-inch wood block with white glue and trimmed it to size. The block permitted careful sanding of the large, flat surface.

A light touch is key with this technique. The 80-grit sandpaper roughed up the styrene, making it appear as though it had woodgrain detail. The finished results are shown in ①, opposite.

Sweating the details

It quickly became apparent that the stirrup steps, air hoses, and hand brake staff wouldn't survive the handling required to complete the model. I started by using a single-edge razor blade to slice the stirrups off even with the bottom of the side sills. This left the fastener detail attached to the car sides.

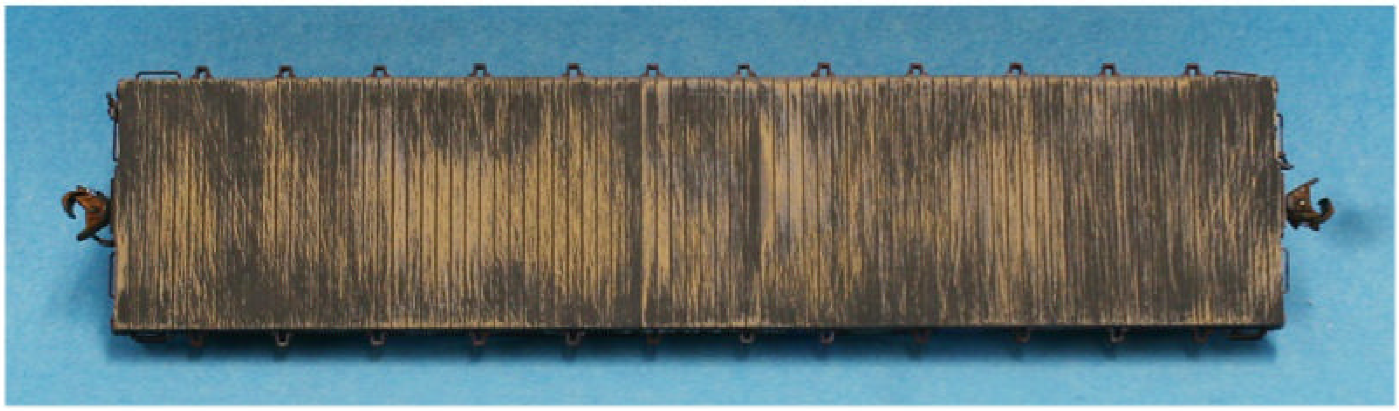
Next, I used a No. 75 bit in a pin vise to drill holes, aligned with the fastener detail, in the bottom of the sill. Then I installed A-Line Type A formed-brass steps (No. 29000) with a small drop of cyanoacrylate adhesive (CA). There should be 12 to 15 inches of open space between the bottom of the sill and inside rung of the step.

The Red Caboose model lacked uncoupling levers. To add those, I first drilled a hole in both ends of the car, to the left of the draft-gear box and next to the poling pocket. I used CA to secure a Precision Scale Co. eyebolt (No. 48276) in both holes.

I then cut two pieces of .040" x .040" styrene strip, approximately .080" long, for the other end of the uncoupling lever. I used a No. 75 bit to drill a hole from end to end in the styrene.

To ensure a strong glue joint, I scraped paint off the draft-gear box cover where the styrene would be attached. I used Testor's solvent cement to secure the styrene. Then I dry fit Tangent Scale Models uncoupling levers (No. TSM-204).

Finally, I used a chisel blade to remove the air hoses attached to the model. I drilled a hole at these locations with a No. 72 bit. Then I cut Hi-Tech rubber air hoses (No. 6038) from the sprue so the air line end had a fine point. I inserted the pointed end into the opening and pulled it through ②. I later painted the angle cocks to match the carbody and the glad hands a rusty color.



① **Weathering the deck.** Mont sprayed the beige plastic flatcar deck with Rust-Oleum Painter's Touch 2X Flat Gray and Flat Black Primer. After it dried, he lightly sanded the deck with 80-grit sandpaper attached to a 2 x 2 wood block.

Vertical brake staff

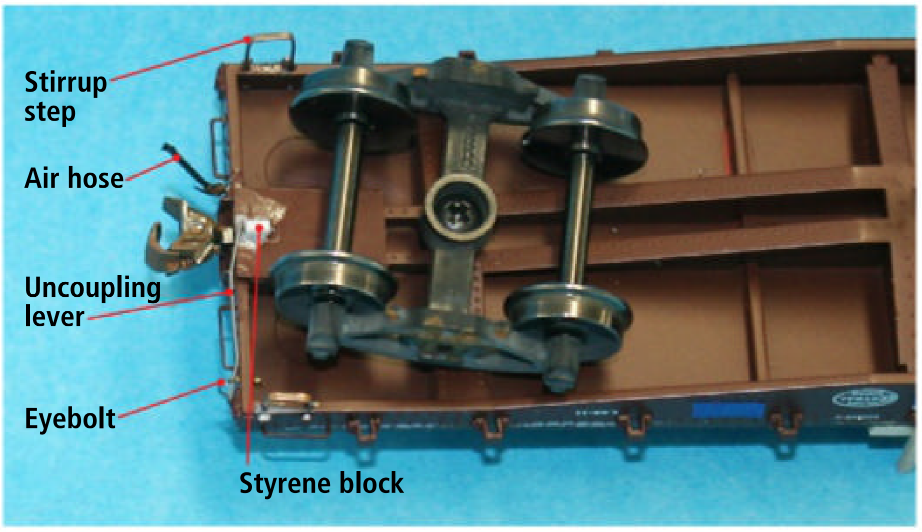
The vertical brake staffs used on many of today's ready-to-run models are plastic, and the Red Caboose model was no exception. Because of the staff's location, it's prone to bending or breaking. That's why I replaced it with sturdier metal components.

First, I drilled and mounted an eyebolt in the end sill. This served as the mounting location for the new brake staff. Then I trimmed off the Red Caboose hand brake details so I could cement a stirrup to the end sill, directly below the brake wheel and staff.

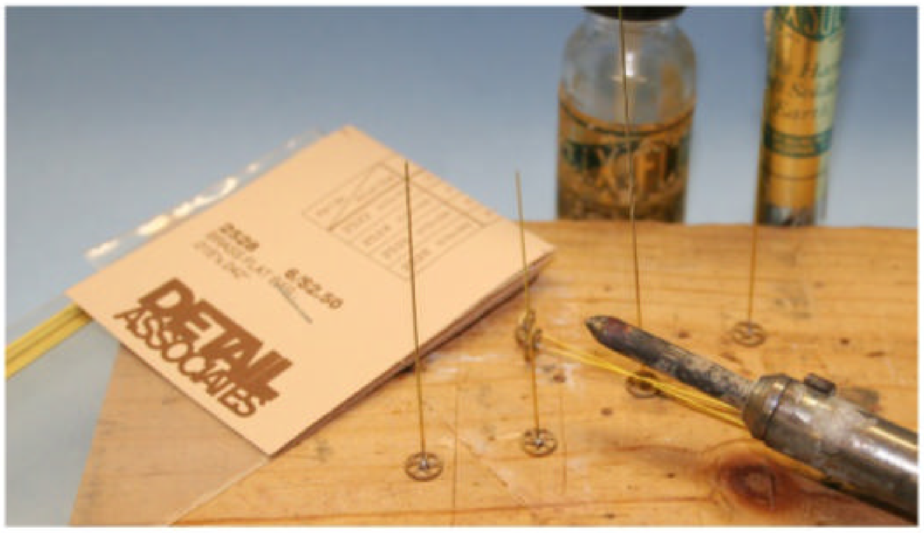
Next, I worked on the replacement brake wheel and staff. I purchased a pack of Precision Scale Co. brake wheels (No. 31117) and left them attached to the casting gate. I used a No. 75 bit in a pin vise to open up the centers. I cleaned up any rough spots with a fine file.

I then laid the brake wheels top down on a soft piece of scrap wood. I cut 4"-long pieces of .015" brass rod for the staffs. Using pliers, I pushed the rod through the center of each wheel and into the wood, far enough that they stood upright independently. The wire should be at a right angle to the wheel.

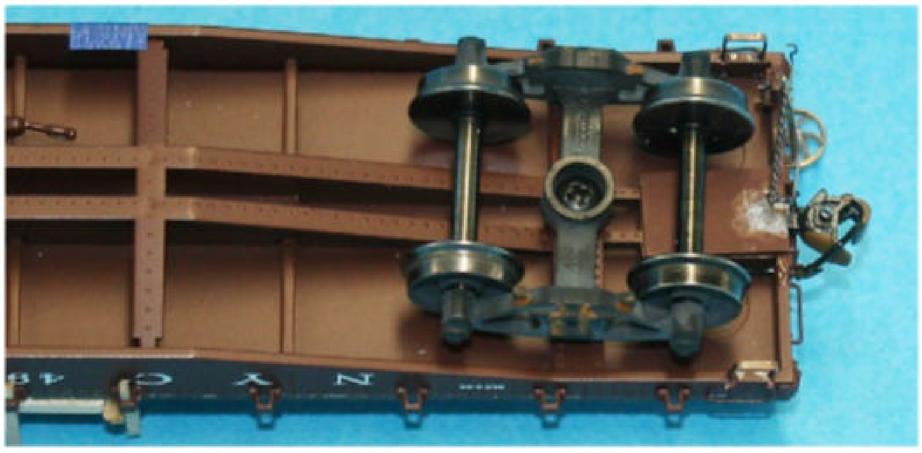
Next, I placed a drop of flux on each joint where wheel and rod meet, followed by a small slice of solder. Then I touched a 40W pencil soldering iron on the joint until the solder turned bright



② **Sturdy details.** Mont added A-Line stirrup steps, Tangent Scale Models' uncoupling levers, and Hi-Tech rubber air hoses to the flatcar. He later brush-painted the steps and levers to match the carbody color.



③ **Sturdy replacements.** The plastic brake staff on the flatcar was in a location prone to damage. Mont replaced it with .015" brass rod soldered to a metal brake wheel casting.



④ **Brake chain.** Mont placed a piece of 40-link-per-inch chain between the bottom of the brake staff and the stirrup. He threaded the other end of the chain onto the uncoupling lever at the styrene block.

Weathering trucks and couplers

Trucks and couplers are often overlooked weathering opportunities on freight cars. Here's the techniques I used on the flatcar.

The Red Caboose model was equipped with Kadee No. 5 couplers. However, the draft-gear box covers were secured with glue, limiting my options. I brush-painted all visible surfaces of the couplers with rust-colored paint.

I used a screwdriver to remove the solid-bearing trucks. Then I gently spread the side-frames until the metal wheelsets popped out.

The sideframes are molded in a glossy engineering plastic. That's great to keep the wheels free rolling. However, the slick surface doesn't hold paint or other weathering products very well. What's the workaround for this? Media blasting.

Before weathering the sideframes, I masked the sockets with tape so those surfaces would stay smooth. Then, holding the sideframes in an enclosed booth, I used a media blaster on the sideframes.

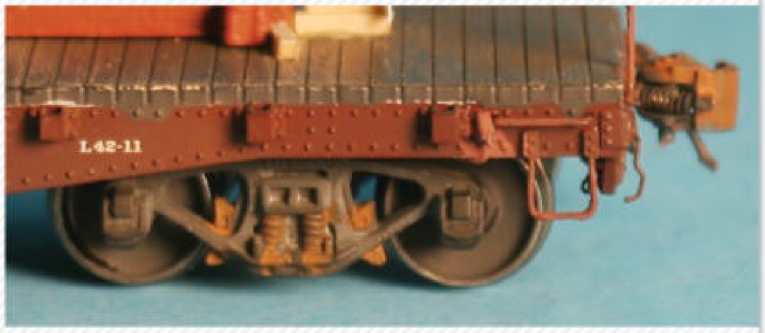
The booth is designed to catch the residue and dust. However, it's still important to wear personal protective gear, like a respirator and eye and ear protection.

Once the blasting was completed, I removed the tape and washed the sideframes in soap and warm water to remove any residue. The result was a set of sideframes that were a pleasing grimy black color.

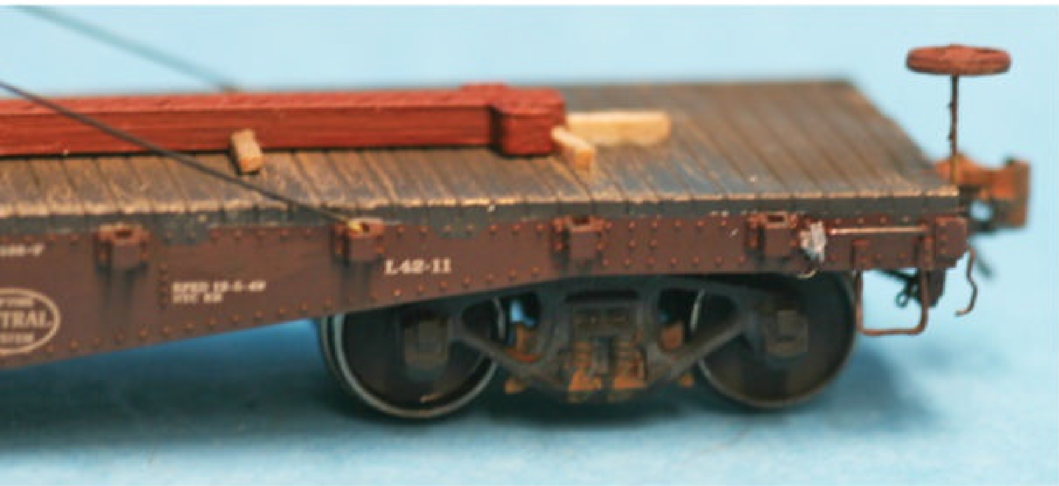
The blasting also left a roughened surface, which came in handy for applying weathering powders, the next step. I used Bragdon powders, starting with light rust on and around the spring packs. I used black on the journal box covers to represent an accumulation of leaking or spilled journal oil.

I turned to paint for the final bits of weathering. I used a rust color on the brake shoes and flat black on the wheelsets. Keep paint off the axle tips and wheel treads.

This multi-step weathering method is durable and yields realistic results.
– Mont Switzer



Mont used a mix of media blasting, weathering powders, and brush-painting to weather the trucks and couplers on his flatcar.



⑤ **Small but important.** On the left side of the car, between the stake pocket and grab iron, is the retainer valve. Mont used a Precision Scale Co. part to add this detail.

silver and flowed evenly around the joint.

I allowed the parts to cool before pulling them out of the wood with pliers. I trimmed off as much excess rod as possible. Then I filed the top and sides of each rod flat so it looked like a bolt head. I also filed off any excess solder from the underside of the brake wheels.

I removed the brake wheels from the runner with side cutters and cleaned up the edges with files ③ (previous page). After trimming the rod to the correct length, I cut a short section of blackened chain and threaded it between the brake staff and stirrup. I ran the other end of the chain toward the center of the car and threaded it onto the uncoupling lever at the styrene block ④. This creates the illusion that the chain actually goes from the vertical brake staff to the underbody brake mechanism.

Bits and pieces

Just around the corner from the brake staff, on the left side of the car, is the retainer valve. To install the Precision Scale Co. part (No. 31797), I drilled a No. 75 hole in the side of the car and secured the casting with CA ⑤.

Then I drilled another hole in the side sill, directly below and as close as possible to the valve. I attached a piece of .008" phosphor bronze wire in the opening with CA.

After the CA cured, I bent the wire down and folded the end under the bottom of the sill. This suggests the retainer valve has an air supply line running to it.

The stake pockets on the model can be vulnerable to damage in an operating layout environment. I managed to lose a pocket while installing the load. Fortunately, Tichy Train Group produces stake pockets in its line of detail parts. The casting isn't an exact match to the Red Caboose model, but the mounting pins lined up perfectly, making installation quick and easy.

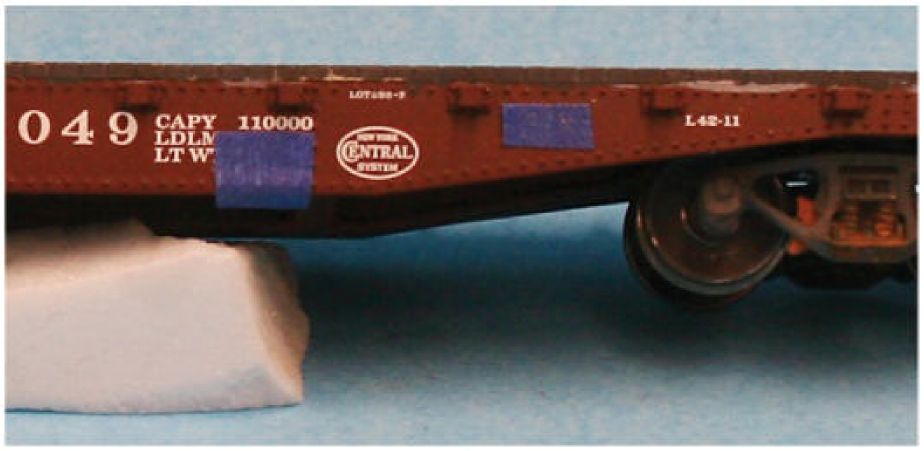
Realistic weathering

As with any model where detail parts have been added, touch-up painting is necessary. In order to preserve the factory paint and lettering, I used a brush to paint almost all of the new parts brown. I left the chain black and weathered it later with assorted powders.

Getting an exact paint match is tricky, but that's where weathering helps out. I applied two coats of Testor's Dullcote with an airbrush. I tinted the first coat with boxcar red paint and the second with grimy black. I used blue painter's tape to mask off the load limit, light weight, reweigh stencil, and repack data so that information would look like it was recently applied ⑥ (opposite page).

The Dullcote not only tones down the car, but it gives the car's surface some tooth. That was important when I further weathered the flatcar with Bragdon weathering powders.

My go-to colors are black, gray, and light rust, which I applied with makeup brushes. I used gray and black on the deck to soften the effects of the sandpaper weathering. I also used the colors to weather the trucks and



⑥ **Simple but effective.** Mont applied blue painter's tape over the weight and repack stencils on the car. The stencils under the tape will be bright white, while the rest of the data will be weathered.

Materials list

A-Line
29000 Type A sill steps
29219 blackened chain, 40 links per inch

Evergreen Scale Models styrene strip
142 .040" x .040"

Hi-Tech Details
6038 rubber air hoses, 22"

Kappler Mill & Lumber Co. HO lumber
KP1120-HOP12 2 x 4
KP1124-HOP12 2 x 8
KP1149-HOP12 4 x 4
KP1151-HOP12 4 x 6
KP1165-HOP12 6 x 8

Model Tech Studios
OD2240P drag line bucket

Precision Scale Co.
31117 brake wheel
31797 retainer valve
48276 eye bolts

Reboxx
WS2-1000 wheelsets, .088" tread

Red Caboose
New York Central flatcar with fish-belly sides

Tangent Scale Models
TSM-204 uncoupling levers

Tichy Train Group
1100 .008" phosphor bronze wire
1102 .015" phosphor bronze wire
1106 .012" phosphor bronze wire
3006 stake pockets

couplers. [See "Weathering trucks and couplers" on the previous page.]

Adding the load

During a train show several years ago I came across an O scale drag line bucket and mast by Model Tech Studios. Though too large for a normal HO scale application, I had in mind the giant drag lines used by the southern Indiana mining companies to remove the overburden hiding coal deposits.

The full-size buckets were subject to extreme wear and abuse and had to be replaced or rebuilt fairly frequently. Therefore, I airbrushed the details with red primer to represent a bucket that Bucyrus-Erie was shipping from its central Ohio manufacturing location on the NYC to one of the strip mines on the Monon in southern Indiana ⑦.

Though the load is neat, the blocking and bracing really make it stand out. I couldn't find a reference specific to loading a bucket and mast in Section 3 of the Association of American Railroads (AAR) *Rules for Governing the Loading of Road Grading, Road Making and Farm Equipment Machinery on Open Top Cars*. Lacking information, I placed the bucket near the center of the car deck and followed common practices used for blocking and bracing other styles of heavy implements.

Assorted sizes of HO scale dimensional lumber worked well for the blocking and bracing. First, I cut eight 4-foot-long 4 x 4s for the side stakes. I tapered the ends so I could gently drive them (four per side) into the pockets alongside the bucket.

With the bucket centered on the deck, I filled the gaps on both sides with 6 x 8s. The length isn't important as long as the 6 x 8s touch the stakes on both sides.

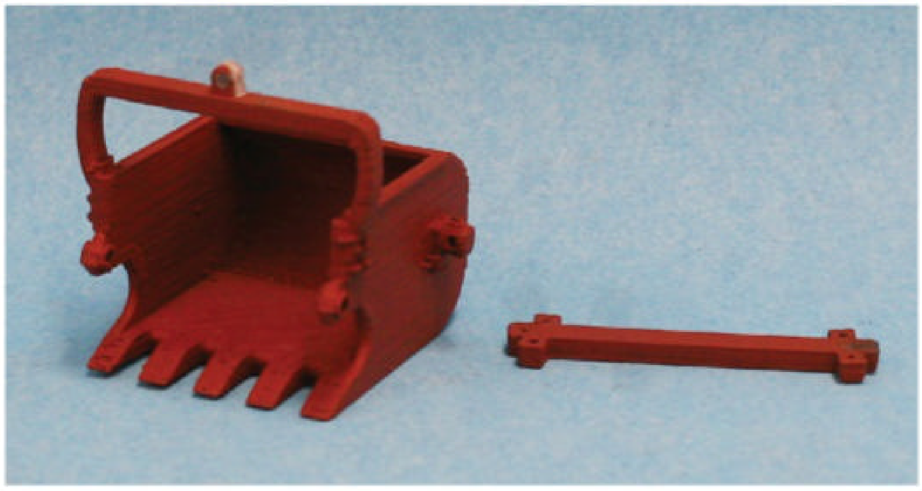
In addition to lateral blocking, the bucket must also be blocked to prevent longitudinal shifting. After placing a 4 x 4 across the car floor, tight against the B end side stakes, I set 6 x 8s between the claws.

The other end of the bucket is contoured. I fabricated five blocks from 2 x 8s and 2 x 4s so they would fit against the contoured bottom of the bucket.

There's plenty of room on the deck for the mast that goes with the bucket. Like the bucket, it must be secured for transport. I placed one end of the mast against the 4 x 4 that runs the width of the car. Then I placed seven additional 4 x 4s around the mast.

I secured all of the wood blocking to the deck with white glue ⑧ (next page). The glue holds the blocking firmly, but you can slide a hobby knife under it if an error is made and the wood needs to be repositioned.

Once all of the blocking was installed and the glue had dried, I scraped off any excess. I touched up spots damaged by the scraping with a small paintbrush and some Testor's Dullcote.

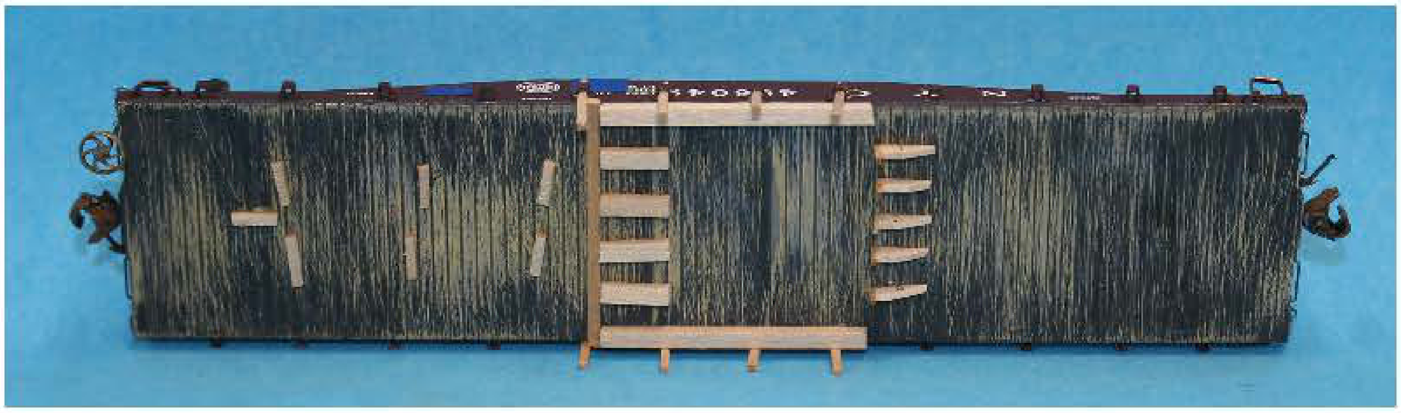


⑦ **Ready for delivery.** To convey the look of a new or refinished part, Mont airbrushed the drag line bucket primer red. A weathered bucket could be used as a load going back to the manufacturer for repair.

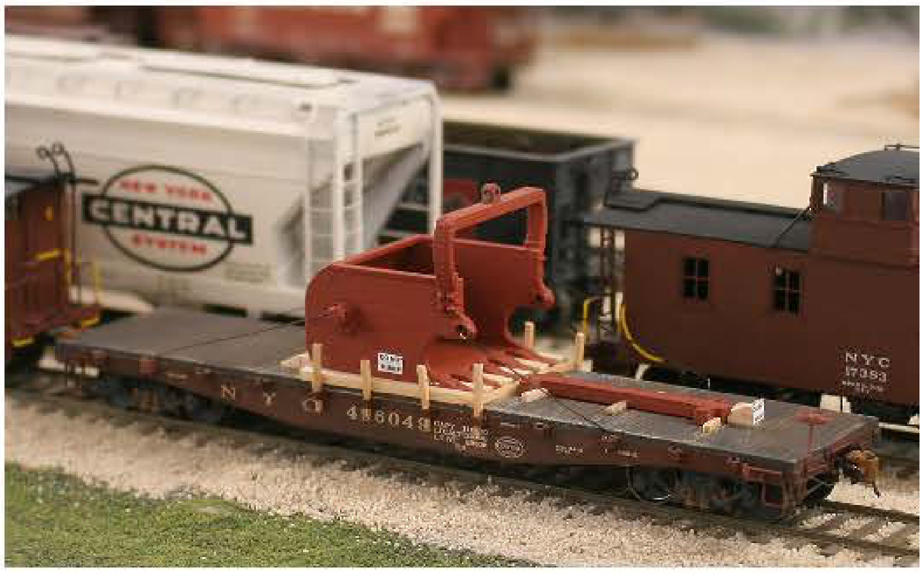
The AAR rules also call for installation of cables or rods to help secure large implements shipped by rail. The rods are often welded to the cargo and terminate on the deck or through the stake pockets. I modeled the four rods with .012" phosphor bronze wire. I used CA to secure the wire to holes that were already in the bucket. I terminated the other end of each wire in the stake pockets. This allows them to be pulled out with the bucket when the load is removed after delivery.

Safety first

Common sense should tell you that a car with a big load and lots of blocking and bracing should be handled with care. Shoving it over a classification hump is out of the question. Many railroads placed cars requiring special handling near the front or rear of the train so crews could keep an eye on them. A further way to ensure safe handling is by affixing Do Not Hump signs to the load.



⑧ **Securing the load.** Mont used assorted sizes of HO scale dimensional lumber to block and brace the drag line bucket and mast. He secured the wood to the plastic deck with white glue.



⑨ **Handle with care.** Heavy loads like the drag line bucket have to be handled carefully. To reinforce that theme, Mont added Do Not Hump signs to the bucket and bracing.

For many years I've successfully used Jaeger HO Products black on white Do Not Hump paper placards. Recently, I've gone through so many of its placard sets that it has become more practical to make my own. I mounted some on .010" thick cardboard for use with stake pocket posts. Those on copier paper are great for car side or door placards.

I attached Do Not Hump signs on three sides of the bucket with small spots of white glue. For the open side of the bucket, I attached an upright made from 4 x 4 to the existing blocking, added a brace made of scrap dimensional wood, cut the placard out, and secured it to the post with white glue ⑨.

Ready for delivery

With that, New York Central 42-foot flatcar No. 496049 is ready to join my rolling stock fleet. The new and replacement details enhance an already quality model, the load adds visual interest, and the blocking and bracing give the loaded car a prototypical appearance.

If you have a flatcar sitting in a box, get it out and start working on it. With a bit of effort, you can turn it into an attention getter.

Mont Switzer is a longtime contributor to Model Railroader *magazine. He lives in Middletown, Ind.*

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36814 WW&F Ry Passenger Car

36813 WW&F Ry Passenger Car

27254 WW&F Ry Forney Steam Locomotive, Road No. 9

Typical American old-timer cars used on the museum trains running on the Wiscasset, Waterville, and Farmington Railway. They can be recognized by the clerestory in the center of the car roof. Cars have complete interior details and metal wheelsets.

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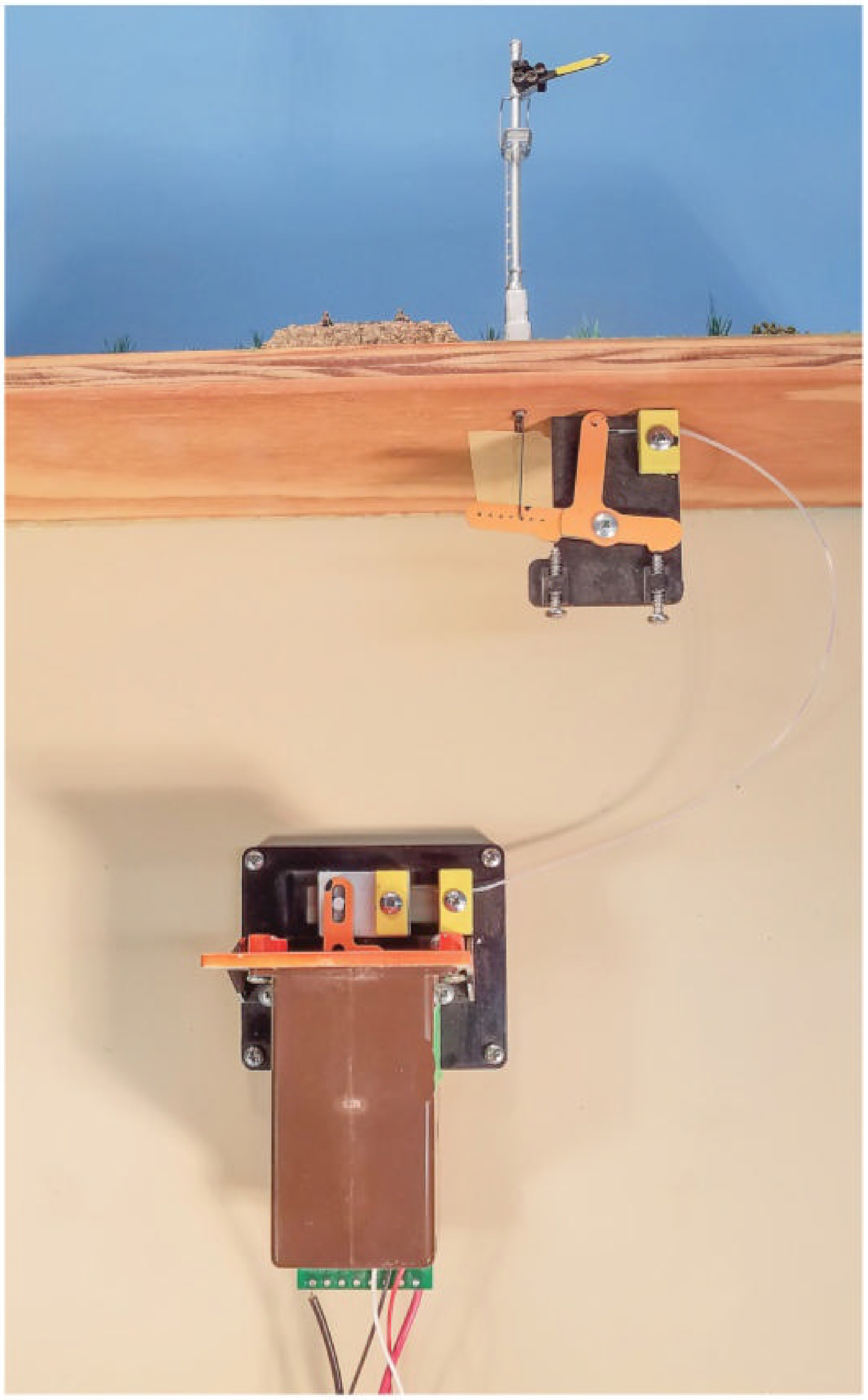
SMAIL, the DCC-controlled Tortoise



① This month Allan Gartner writes about Circuitron's SMAIL switch machine. It's shown here with Circuitron Remote Signal Activator. Illustration used with permission of Circuitron

I've always found flipping turnouts with my throttle appealing, except when I'm in a yard with a lot of turnouts to frequently line. However, using accessory decoders to operate turnouts eliminates the need for control panels that stick out into aisles. A switch machine with an integrated Digital Command Control (DCC) accessory decoder is a compact and appealing option.

One such device is the Circuitron SMAIL – Slow Motion Actuator with Integrated Logic. It's just about an ⅛" longer than its green cousin, the Tortoise.

Besides controlling turnouts, the SMAIL can control crossing gates and three-position semaphore signals ① using Circuitron's Remote Signal Activator.

The SMAIL is similar in appearance to the Tortoise, but is in a brown plastic case. It has eight Tortoise-equivalent terminals, a status light-emitting diode, a pushbutton, and three additional input contacts ②. Its internal electronics are based on an enhanced version of the NCE Switch-It.

There are a few instances where you might buy a SMAIL and use it with DC or AC power because of capabilities that a standard Tortoise doesn't have. Examples include using multiple control panels, remembering the last position even after the layout is powered down, and retaining the status of automatic detection circuits.

Should you want to use DC to reverse the direction of the SMAIL, you'll need to change configuration variable (CV) 586 to enable DC polarity control.

You can power a SMAIL with AC as long as the AC doesn't exceed 18VAC with no load. Note that many power packs can exceed 18VAC. The SMAIL can be used with any scale, just make sure you don't use it with DCC track power that will exceed 18V.

The SMAIL has two control connections, C1 and C2. You can operate the SMAIL with momentary switches on one or more control panels, a diode matrix, or other automatic detection circuits, in addition to DCC commands.

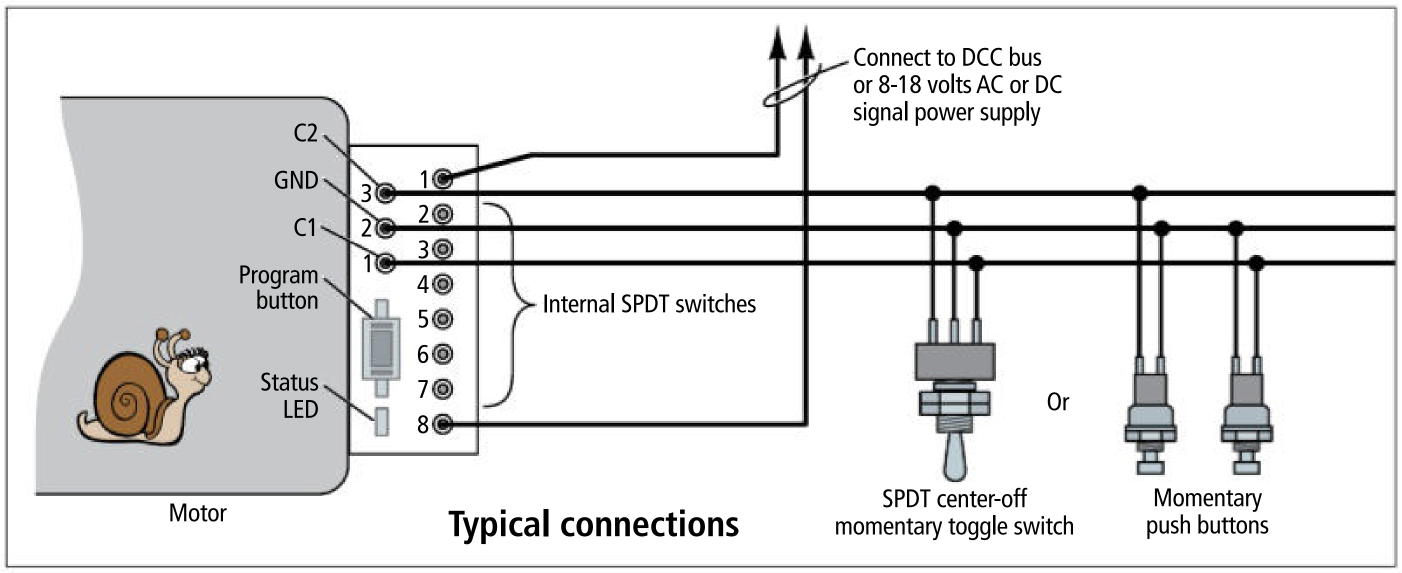
You can also use C1 and C2 to override DCC commands. Any automatic circuits that you use to drive the SMAIL must provide a ground to C1 and C2. Note: Diode matrices were common prior to DCC-controlled routes/macros. Routes/macros are a more flexible approach and don't require as much electrical knowledge.

② The SMAIL circuit board is a little longer than the one on a Tortoise to accommodate a pushbutton, a status LED, and a three-terminal connector.

In switch machine mode, use control terminals C1 and C2 with a momentary connection to ground to operate the SMAIL ③. This method allows you to have pushbuttons or momentary toggles on more than one control panel. Circuits made by other manufacturers or of your own design can also control a SMAIL by connecting C1 or C2 to the ground terminal. If a switch is used that isn't momentary, it will override any other momentary inputs.

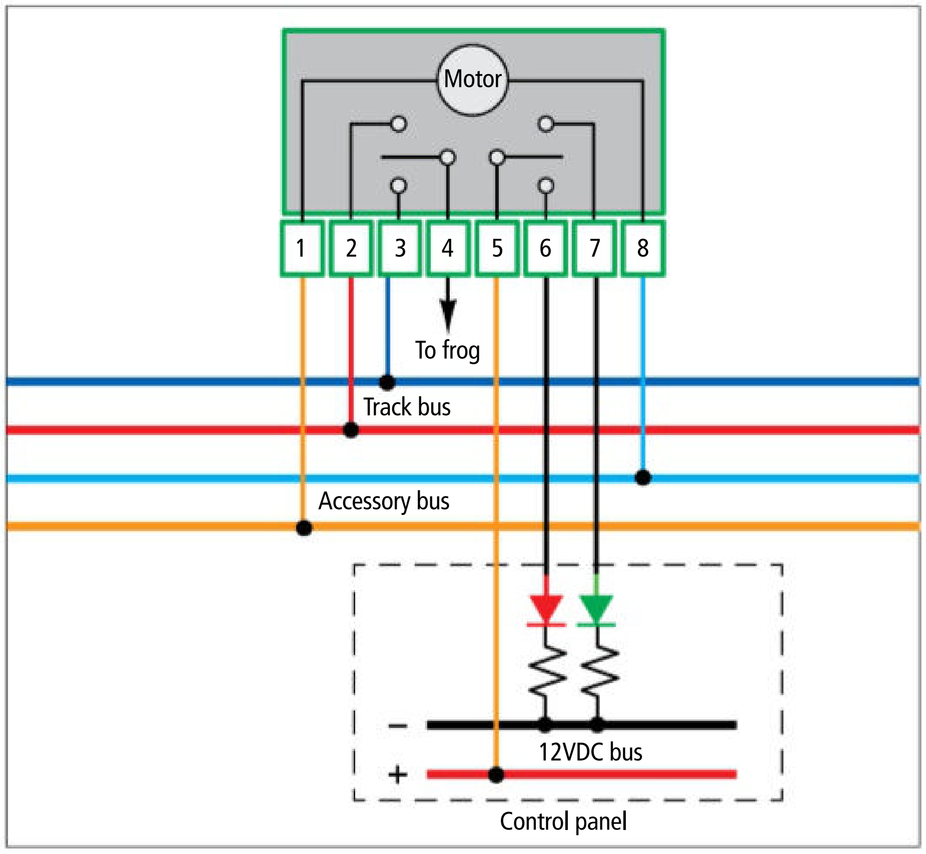
The SMAIL is available with screw or solder terminals. You also have the option of using Circuitron's ZipZ ④ to provide screw terminals. The ZipZ slips onto the Tortoise or SMAIL's eight terminals, and has eight contacts that perfectly align with the terminals on a SMAIL.

ACCESSORY OPS MODE ALLOWS YOU TO BROADCAST A COMMAND THAT DISABLES THE C1 AND C2 INPUTS.
– ALLAN



③ This illustration shows how to use a SMAIL with momentary switches. You can also use a center-off switch that isn't momentary and can act as a dispatcher override. Illustration used with permission of Circuitron

④ Here's what the ZipZ six-pack kit looks like prior to assembly. The screw terminals and edge connector have been attached to the ZipZ in the upper left.



⑤ If you want minimal wires under your layout, a DCC-operated switch machine is a good option. Two wires power the switch machine and two wires are used for power-routing. The two resistors are shown should be about 1,000Ω.

If you prefer, you can attach a piece of CAT 5 cable and mount your own terminal strip under your benchwork. CAT 5 cable can be obtained at your local home improvement store.

Terminal blocks can be purchased and added to a SMAIL that was purchased without them already installed. Use a 25W-35W soldering iron and be sure to mount them as shown in ②. Don't mount them backward, as correcting this problem is extremely difficult.

The SMAIL mounts and installs the same as a Tortoise. It can also be used with Circuitron's Remote Mount (800-6100) when space is tight or the Remote Signal Activator (800-8100) when used with semaphores and crossing gates.

A SMAIL draws 16-20mA, so even several dozen will not place much of a load on a booster. Optionally, using a separate 3A booster can power up to 150 SMAILs.

Wire your accessory bus to terminals 1 and 8 to control the SMAIL so that it can receive DCC commands. Using another booster to drive your accessory bus will prevent a short from stopping the SMAIL. If you're power-routing your frogs, connect the DCC track bus to terminals 2 and 3 ⑤.

The SMAIL can be used with any DCC system that can provide accessory (turnout) or National Model Railroad Association (NMRA) signal commands. It also has a mode that can be used with Digitrax's signal mode. The signal modes are useful for driving semaphores. Signal options are configured like programming accessories.

With other systems, it's common to program accessory device CVs by pushing the button on the SMAIL and sending an unused locomotive ops mode programming command. Note that NCE's unique accessory ops mode allows you to broadcast a command that disables the C1 and C2 inputs. This is useful for open houses where you don't want guests pushing buttons and derailing trains.

If you need a position indicator on a panel, you can use terminals 5, 6, and 7 to drive LEDs ⑤.

I've always found that Tortoises are easy to mount. Before mounting, program your SMAIL. You may find that heavier spring (piano) wire may be needed. I've always used .032" wire. The instructions tell you how to prep the SMAIL or Tortoise for doing so.

Correction

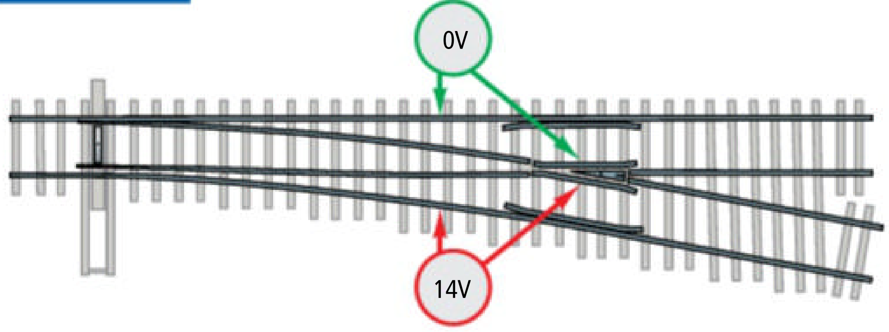
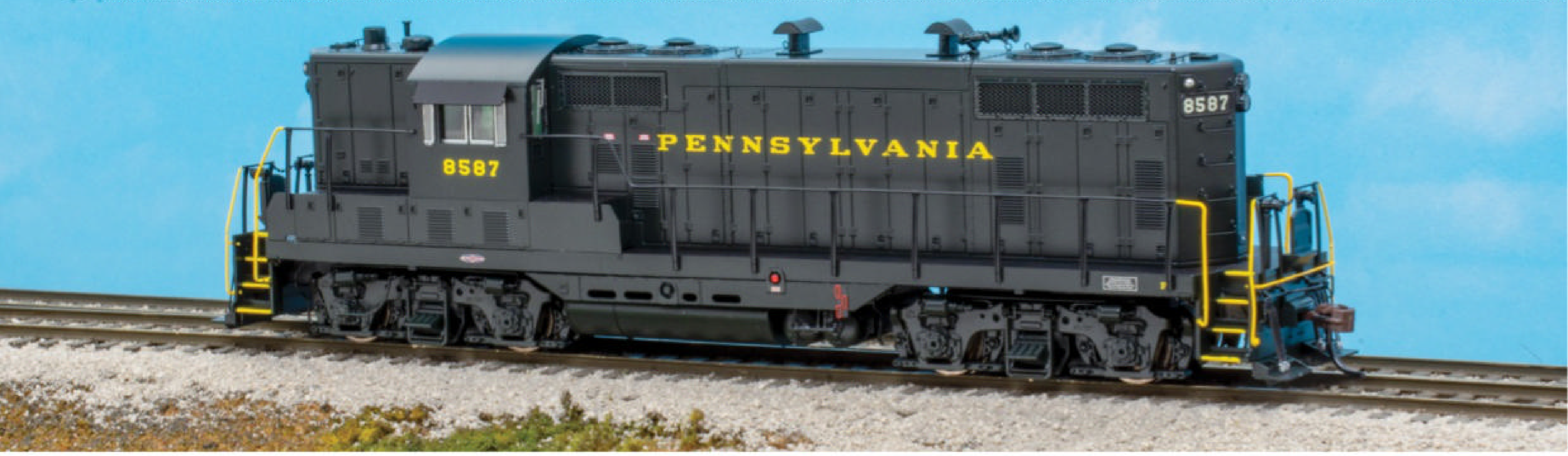


Figure ⑧ in the March 2023 DCC Currents column had the points set the wrong way. This turnout should have been lined for the diverging route, as shown above.



Athearn Genesis HO scale EMD GP7

Athearn has released a new run of HO scale Electro-Motive Division GP7 diesel locomotives in its Genesis series. The four-axle road switcher features railroad-specific details, a detailed cab interior, and all-wheel drive and electrical pickup.

Our sample is decorated as Pennsylvania RR No. 8587, part of a five-unit order built by Electro-Motive Division under job number 5291. The PRR class ES-15ms locomotives were delivered in August and September 1953.

The 8583 through 8587 were used in the Chicago service area on both freight and commuter trains. The units ran long-hood forward and featured steam generators but didn't have cab signals or train-phone antennas. At some point between delivery and November 1966 the fuel tank skirting was partially removed on the 8587.

In 1966 the 8587 was renumbered 5959. The GP7 retained that number on Penn Central and Conrail.

The Athearn Genesis model has a plastic body and die-cast metal chassis. Features on the short hood include a nail antenna and a steam generator exhaust and intake. The long hood is fitted with four 36" fans with see-through grills, a cast-brass three-chime air horn, and metal spark arrestors. The GP7 also has factory-installed and painted wire grab irons and metal lift rings.

The front and rear pilots have see-through plastic footboards, m.u. and trainline hoses, plastic uncoupling levers, and formed wire footboard handrails. High m.u. stands are mounted on both sides of the drop step, which is molded in the raised position. Lowered drop steps are supplied in the box.

Like other Athearn models, the GP7 has Celcon handrails and stanchions. However, the pressed steel stanchions aren't correct for the GP7. The model should have T-section stanchions.

A detailed interior is visible behind the positionable cab windows. The control stand and walls are painted light green, and the seats are black.

The Dark Green Locomotive Enamel is smooth and evenly applied. The lettering, which is crisp and opaque, follows prototype placement.

The vertical handrails, footboard handrails, and step faces are picked in yellow. A few of the steps had yellow paint on top. This could be scraped off with a No. 11 blade or covered using paint and a fine brush.

The Athearn model closely follows drawings in Electro-Motive Division's *Specification 8018* from April 8, 1949.

The model we received features a dual-mode SoundTraxx Tsunami2 sound decoder, so I tested it in both direct current (DC) and Digital Command Control (DCC).

For DC testing I used an Athearn power pack. The sound effects came on at 6.2V. At 8.6V the model crawled along at 2 scale mph. The GP7 topped out at 80 scale mph at 13.2V. Full-size GP7s had a maximum speed between 55 and 89 mph depending on the gear ratio.

I turned to an NCE Power Cab for the DCC testing. Out of the box, the speed range was rather limited: 7 scale mph at step 1 and 37 scale mph at step 28.

A factory reset didn't remedy the situation so I moved to plan B, adjusting configuration variables. I changed CV2 (Vstart) and CV5 (Vmax) to 1 and 82, respectively. At step 1, the road switcher moved at 3 scale mph. The four-axle unit hit a top speed of 71 scale mph at step 28.

Overall, Athearn did a good job on the PRR GP7. The stanchion error was a bit of a surprise, as the company has used the correct version on previous runs. The 8587 would look at home on the point of a Chicago-Valparaiso, Ind., commuter train or heading a local freight. – *Cody Grivno, senior editor*

Facts & features

Price: Direct-current model with 21-pin NEM connector, $219.99; with dual-mode SoundTraxx Tsunami2 sound decoder, $319.99

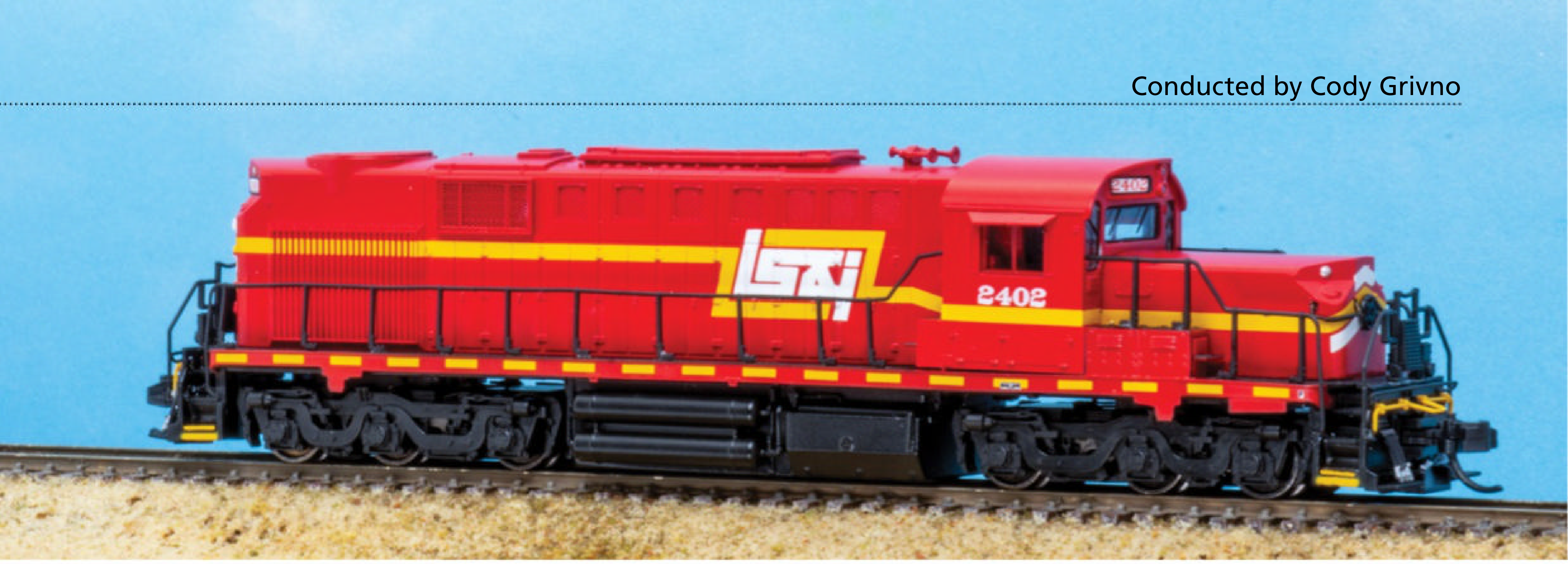
Manufacturer
Athearn Trains
2904 Research Rd.
Champaign, IL 61822
athearn.com

Era: 1953 to 1966 (as decorated)

Road names: Pennsylvania RR (Dark Green Locomotive Enamel); Bangor & Aroostook (dark blue in two road numbers, American Revolution Bicentennial in one number); Great Northern (orange-and-green simplified scheme); Kansas, Oklahoma & Gulf (black, red, and white in one number); Midland Valley (black, red, and white in one number); and St. Louis-San Francisco (Frisco, Mandarin Orange and white). Three numbers per scheme unless noted.

Features

- 40" metal wheel stubs mounted on plastic axles
- Body-mounted McHenry scale couplers
- Weight: 11.7 ounces



Broadway Limited Imports N scale RSD15

While most alligators can be found in freshwater, this one can make its home on your N scale layout. From hauling manifest freights across the desert to ore service in the Upper Midwest, the Alco RSD15 was a workhorse. Broadway Limited Imports has faithfully represented this locomotive in N scale.

Facts & features

Price: $299.99
Manufacturer
Broadway Limited Imports
9 East Tower Circle
Ormond Beach, FL 32174
broadway-limited.com
Era: 1975-1988 (as decorated)
Road names: Lake Superior & Ishpeming (low hood); Atchison, Topeka & Santa Fe (low hood in two schemes); Bessemer & Lake Erie (high hood); Canadian Pacific (high hood [RSD17] in one road number); Chesapeake & Ohio (high hood [RSD7]); Duluth, Missabe & Iron Ridge (high hood); Penn Central (high hood); Pennsylvania RR (high hood); Southern Pacific (low hood); and St. Louis Southwestern (Cotton Belt, low hood). Two numbers per scheme unless noted.
Features

- All-wheel electrical pick-up
- Body-mounted couplers, at correct height
- Factory-applied handrails, grab irons, horn, bell, antenna, and more
- Paragon4 DCC sound decoder
- Pro lighting mode with light-emitting diode lighting
- Railroad-specific body style
- Switcher mode for low-speed control
- Weight: 2.9 ounces

Alco began production of the six-axle RSD15 in 1956, and three of the 15 units on order were low short hood units for the Atchison, Topeka & Santa Fe. As opposed to the high-short hood units that the Pennsylvania RR and Duluth, Missabe & Iron Range had ordered, these low-short hood units provided improved visibility from the cab, setting an industry trend. Santa Fe eventually ended up ordering a total of 50 units, the rest of which were produced in 1960. The six-axle RSD15 was powered by Alco's Model 251 diesel engine and was rated at 2,400hp The locomotive was built from Alco's previous RSD-7 in response to the Fairbanks-Morse Train Master.

By 1975 these units were being retired. The locomotives would go to live second lives at railroads such as the Bessemer & Lake Erie and Lake Superior & Ishpeming. Many of these RSD15s operated until the late 1980s, with the LS&I replacing its units in 1988.

Our model is painted in Lake Superior & Ishpeming's eye-catching red and yellow paint scheme and numbered 2402. The prototype locomotive was originally built as Santa Fe No. 941 in 1959. It was sold to the LS&I in 1975. The 2402 is currently on display at the Illinois Railway Museum as Green Bay & Western No. 2407, though it retains its LS&I paint scheme.

The red paint is evenly applied on the plastic body, and the yellow and white stripes are all crisp. Most of the builder plate is legible under magnification. The Automatic Car Identification (ACI) placards affixed to the sill above the fuel tank were omitted. These would be easy to add with styrene strip and one of the various ACI decals available.

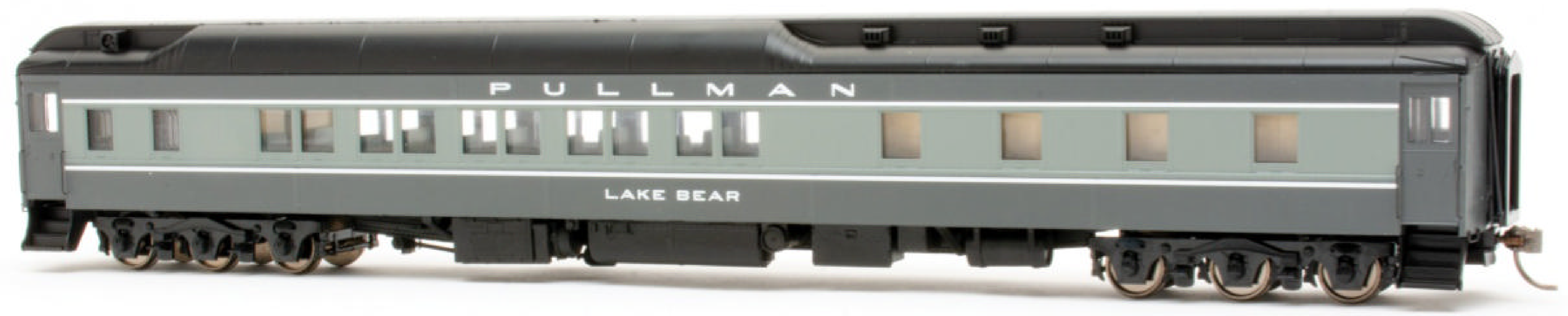
Other details such as the sill stripes, bottom step faces, and yellow uncoupling levers match prototype photos. The body captures the unique shape of the RSD15, and the dimensions are consistent with data in the 1956 *Locomotive Cyclopedia of American Practice* (Simmons-Boardman Publishing Corp.)

Out of the box, the locomotive ran smooth and consistent. All of Broadway Limited's N scale RSD-15s in this run feature the company's Paragon4 sound decoder. This decoder is dual-mode and will operate on both direct-current and Digital Command Control systems. While using DC control, the engine began to make sound and move at 9V. At its maximum voltage, the locomotive reached a speed of 89 scale mph.

As always I had more control of the locomotive's speed, sound, and lighting functions with DCC. Without adjusting any CVs, the locomotive crept along at 4.3 scale mph at speed step 1. At speed step 28, the RSD15 reached 90 scale mph, about 10 mph above the prototype's top speed.

The model rides on two six-axle trucks that are nicely detailed. All of the metal wheels are electrical pick-ups and all are powered. Some of the wheels are slightly narrower than National Model Railroad Association S-4.1 wheel standards. The Micro-Trains compatible couplers are both mounted at the appropriate height.

Whether you're hauling iron ore unit trains or need power for a short line, the BLI N scale RSD15 will serve you well. A few alligators can still be found in service today at museums. – *Bryson Sleppy, associate editor*



Atlas Model Railroad Co. HO scale 10-1-2 Pullman sleeper

An HO scale Pullman 10-section, 1-drawing-room, 2-compartment sleeper has joined the growing lineup of heavyweight cars from Atlas Model Railroad Co. The Master Line model features an injection-molded plastic body, a mix of plastic and wire grab irons, and metal knuckle couplers.

The Pullman Co. was famous for its sleeping car accommodations, and its cars served on overnight passenger trains from coast to coast across North America. From the turn of the 20th century through the World War II years, Pullman owned and operated sleeping cars for various railroads.

Heavyweight sleepers such as the 10-1-2 were built (and rebuilt) from the 1910s through the 1920s. The later rebuilds often had air conditioning installed, as evidenced by the ductwork added to the clerestory areas on the roof above the accommodation areas (bathrooms, corridors, and vestibules weren't air conditioned, so the ducts don't cover those areas).

The *Lake* series cars, of which this model is one, were built between August 1923 and October 1926, with a few exceptions. The car were built to plan 3585 or 3585A. Most of these cars would be scrapped by the 1960s.

Many of the cars were painted "Pullman Green," a dark green color with a bit of an olive tinge. Others were painted in the colors of the railroads on which they traveled. In later years, many pool cars were painted two-tone gray with white separation stripes, inspired by the New York Central's color scheme.

These models were originally produced as kits by Branchline Trains. Atlas purchased the company's rolling stock line, and has been offering the kits as ready-to-run models for several years.

The kits had a reputation for being challenging to assemble due to the high parts count, but this is mostly resolved with the current offerings. However, if you're hankering to cut and glue some pieces, Atlas includes the parts to detail the coupler areas of the model with steam piping, coupler yokes, and chains. The parts are molded in black plastic.

The car has body-mounted draft-gear boxes. Because of this, Atlas recommends operating the heavyweight sleeper on 24" radius curves or larger.

Atlas modified the center sill of the models to follow the old Branchline suggestion to allow the trucks to swing freely. A bit of scale fidelity is sacrificed, but it makes the models much more reliable on model railroad curves.

Underbody detail includes the Pullman mechanical air-conditioning system with its axle-driven motor and compressor replicating a connection to the truck through a long driveshaft.

The model has turned metal wheels on metal axles. All wheels are insulated, so if you want to add track-powered lighting to these models, you'll need to devise a wheel wiper system.

Access to the interior is through the roof. On our sample, it was easy to slip a fingernail between the roof casting and the sides of the car. In addition to lighting, it would be easy to add passengers. Interior detail is simple, but the basics are all there.

Our sample model is painted in the later NYC-inspired scheme. It has a dark gray body with lighter gray window band and block lettering of the final repaint after 1953. The paint on our sample was smooth and opaque, and the lettering is sharp and clear.

The car weighs 6.5 ounces, about .25 ounce less than National Model Railroad Association Recommended Practice 20.1 suggests for an 11½" long car. The metal knuckle couplers were mounted at the correct height, and the metal wheelsets were in gauge.

If you've been wanting one (or more) of these cars, and you were scared off by the kit-builders' experiences with the Branchline cars, now is the time to start your collection. Pullman sleepers criss-crossed the nation up until the dawn of Amtrak in 1971, and many heavyweights lasted into the 1960s. Atlas has done a nice job of making these former kits accessible to a wide audience. – *Eric White, editor*

Facts & features

Price: $89.95
Manufacturer
Atlas Model Railroad Co. Inc.
378 Florence Ave.
Hillside, NJ 07205
shop.atlasrr.com
Era: mid-1920s to 1960s, depending on paint scheme, 1953 to 1960s as decorated
Road names: Pullman (two-tone gray and Pullman Green), Lehigh Valley, Mexico (SCD), Pennsylvania RR, Southern Pacific, Southern Ry., and Union Pacific. Also available painted Pullman Green but unlettered.

Features
- 24" minimum radius recommended
- Detailed interiors

QUICKLOOK

WalthersMainline HO scale ACF 40-foot modernized boxcar

ROCK ISLAND
R. I.
27202
Rock Island

Price: $31.98

Manufacturer
Wm. K. Walthers Inc.
5601 W. Florist Ave.
Milwaukee, WI 53218
walthers.com

Road names: Rock Island, Atlantic Coast Line, Detroit & Mackinac, and Erie. Four road numbers per scheme.

Era: 1960s to 1980s

Comments: Wm. K. Walthers Inc. recently released a new run of its Mainline series modernized 40-foot American Car & Foundry (ACF) boxcar. The HO scale model depicts a boxcar that was rebuilt to meet industry safety standards of the era.

Our sample is decorated as Rock Island No. 27202, part of the railroad's 27200 through 27349 series built by ACF under Lot No. 11-5566 in October 1960. At the time the Rock Island ended operations in 1980, 98 of the 150 boxcars were still on the roster.

The WalthersMainline model has a one-piece injection-molded plastic body with molded 8-foot Youngstown doors, tack and routing boards, and grab irons. Additional features include 10 body panels, late Stanray 4/4 improved Dreadnaught ends, short ladders on the A end, and tall ladders on the B end.

The Stanray diagonal-panel roof is a separate piece. It has six tabs (three on both long edges) that lock into slots inside the body. A molded corner grab iron is on the left corner of the B end.

A rectangular steel weight is secured to the bottom of the car's interior with a pair of Phillips-head screws. The weight accounts for 1.7 of the model's 3.7 ounces.

Underneath, the boxcar has molded draft-gear boxes, laterals, and floor board detail. The center sills, crossmembers, body bolsters, and bolsters are cast as a single unit. The air reservoir, brake cylinder, control valve, and related piping are freestanding.

The car is fitted with screw-mounted solid-bearing trucks. The 33" metal wheels are mounted on plastic axles.

The boxcar's dimensions closely follow data in the April 1980 *Official Railway Equipment Register* (National Railway Publication Co.)

If your HO scale model railroad depicts the 1960s through the 1980s, you'll want to check out the Walthers Mainline 40-foot modernized ACF boxcar. – *Cody Grivno, senior editor*

QUICKLOOK

Milwaukee, Racine & Troy HO scale three-bay covered hopper

Milwaukee, Racine & Troy
MRT 752123
MR &T

Price: $27.99

Manufacturer
Produced by Accurail, available from
Kalmbach Hobby Store
KalmbachHobbyStore.com

Era: December 1997+

Comments: The Kalmbach Hobby Store is offering Accurail's HO scale American Car & Foundry 4,600-cubic-foot capacity Center Flow covered hopper kit in a new Milwaukee, Racine & Troy paint scheme. This run is decorated in the freelanced railroad's Mineral Red scheme with white graphics.

The injection-model car is based on Accurail's 2000-series tooling. The kit has a one-piece body with molded end cages, running boards, and grab irons. The hatch cover and brake wheel are modeler-installed parts.

The slope sheets are separate castings. The sheet for the B end has mounting holes for the brake cylinder and air reservoir. I had to scrape paint off the mounting pins on both parts so they would fit in the holes. I used liquid plastic cement to secure all freestanding parts.

The underbody is a one-piece casting with molded draft-gear boxes, bolsters, and shaker bracket detail on the hopper bays. The top of the underbody visible inside the end cages has molded lever and support bracket detail.

Freestanding underbody parts include the draft-gear box covers and outlet gates. Use care when removing the outlet gates from the sprue as they have delicate parts.

A small plastic bag contains the roller-bearing trucks, Delrin engineering plastic 33" wheelsets, Accumate couplers, and four 2-56 x 3⁄16" screws (for securing the trucks and draft-gear box covers). I used cyanoacrylate adhesive to attach the metal trip pins to the two-piece Accumate couplers.

The kit also includes steel weight. Notches on the back of the slope sheets help hold the weight in place. I used Crafter's Pick The Ultimate, a water-based contact adhesive, to further secure the weight. Do not use solvent-based adhesives as they may damage the plastic.

At 4.7 ounces, the car is at the correct weight per National Model Railroad Association Recommended Practice 20.1.

The MR&T covered hopper would look good in unit grain train or as part of a modern-era manifest freight. If you're looking for an excuse to do some modeling, pick up one of these kits. – *Cody Grivno, senior editor*

By Jerry Dziedzic

Following rules saves lives

I enjoy hearing from readers and MR's editors usually send me notes they receive about my column. The notes often inspire new columns. Some tease me about my bloopers, which I don't mind. January's "Radio dos and don'ts" sent the number of letters to a high that shattered the old record.

Dave Abeles and I set up the January photo to illustrate the IC wreck I discussed that month. We didn't notice the open switch half a car-length before the speeding express when we staged the scene of a freight that overran a home signal and fouled the main line. I spotted it when the page proof arrived but deadline loomed so I let it go, gambling that the photo would appear in print small enough that no one would notice this detail. Bad decisions usually start this way. How quickly I found out how many sharp-eyed readers I have, earning myself a brand-new dunce cap!

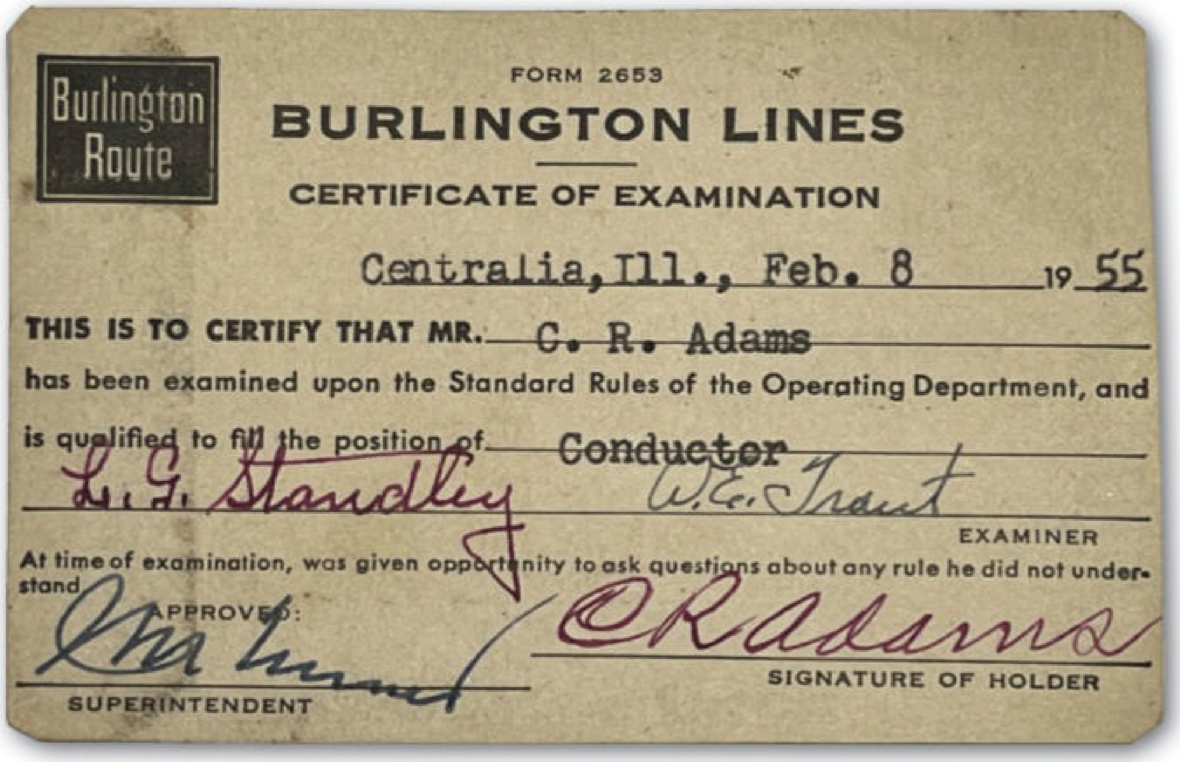
There's a lesson in this. Carefully considered shortcuts can make work easier. Others, rushed like our photo and justified by "no one will notice" or "I can get away with it," risk disaster. Every rulebook that I have seen urges "obedience to the rules is essential to safety" or uses words to similar effect.

The column prompted Jim Homoki to write and remind me of a 1974 Penn Central wreck in Cleveland which involved radio procedures, among other factors. (Graciously, he did not point out the open switch in the photo.) An Electro-Motive Division GP35 and GP40 leading train OV-8 with 93 cars and a caboose from Columbus to Cleveland struck the massive counterweight of an open drawbridge over the Cuyahoga River. Investigators tested the signals protecting the bridge successfully. Two reliable witnesses testified that the home signal displayed stop, but no evidence of a brake application was ever found.

AS SACRED AS OBEDIENCE TO THE RULES WAS TO RAILROADERS, OUR HOBBY HAS ROOM FOR FUN. - JERRY

Shortly before the collision, the drawbridge operator radioed the train and said, "All clear ahead of you now, OV-8." At that time, 3:52 a.m., the freight passed an advance signal indicating approach, meaning proceed prepared to stop at the bridge home signal. Moments later, in a fateful lapse, the operator opened the drawbridge for a waiting vessel without warning the train. OV-8 ran through the home signal without slowing, colliding with the counterweight at 3:56 a.m.

Multiple failures took place, as so often happens. However, evidence suggests that the engineer relied on radio information instead of observing signal indications. Putting this in plain English, would you run a stoplight because a friend phoned you that the intersection was clear? We'll never know why he didn't begin emergency braking.



FORM 2653

BURLINGTON LINES

CERTIFICATE OF EXAMINATION

Burlington Route

Centralia, Ill., Feb. 8 19 55

THIS IS TO CERTIFY THAT MR. C. R. Adams

has been examined upon the Standard Rules of the Operating Department, and

is qualified to fill the position of Conductor

L. G. Standley W. E. Traut

EXAMINER

At time of examination, was given opportunity to ask questions about any rule he did not understand

APPROVED:

SUPERINTENDENT

C R Adams

SIGNATURE OF HOLDER

C. R. Adams, a Burlington conductor, carried this wallet-sized card as proof of his knowledge of the operating rules. The reverse side shows his record of re-examination, two years after his examiners issued the original. Jerry Dziedzic photo

A long-service NS retiree wrote me about the January column, too. He's now the Track Supervisor at a local operating railroad museum and assists its annual rules classes. He described the pride professional railroaders take in "knowing the rules and being in compliance," a sentiment others have expressed to me.

This reminded me of my November 2021 column, "Going to rules school." It mentions the exams used to test a railroader's working knowledge. Generally, these took place annually or biennially and still do. A 1930s version in my collection is a 40-page booklet which made me shudder and think of the blue book exams I sweated over during my education. The candidate wrote his answers to 408 questions, only a few of which a simple yes or no satisfied, in the flourishing penmanship of the period. Modern examples might follow multiple-choice or fill-in-the-blank format and may be administered via the internet. Oral examinations may take place, too. Success earned an examination record like the one in the above photo certifying that its bearer was qualified.

As sacred as obedience to the rules was to railroaders, our hobby has room for fun. Exchanging employee passes highly resembling their prototypes was once popular for model railroaders. Perhaps it's time to revive the practice, using certificates of examination. Searching internet auction sites with "railroad certification of examination" or "railroad examination record" produces plenty of examples. Authentic reproductions would be easy to create and could make a nice memento of an operating session, whether or not the model railroad owner waives the exam. MR

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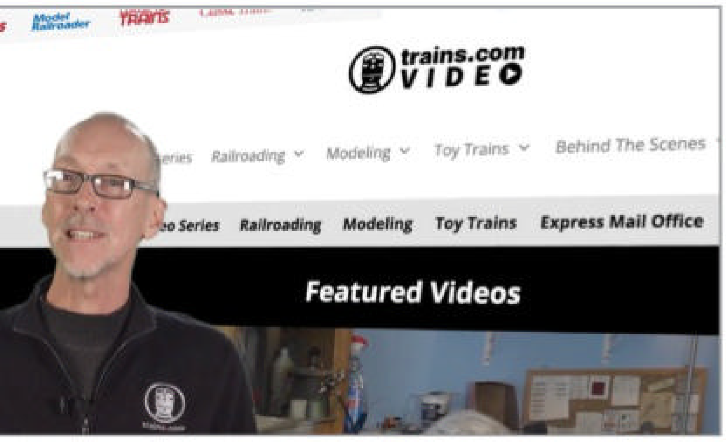
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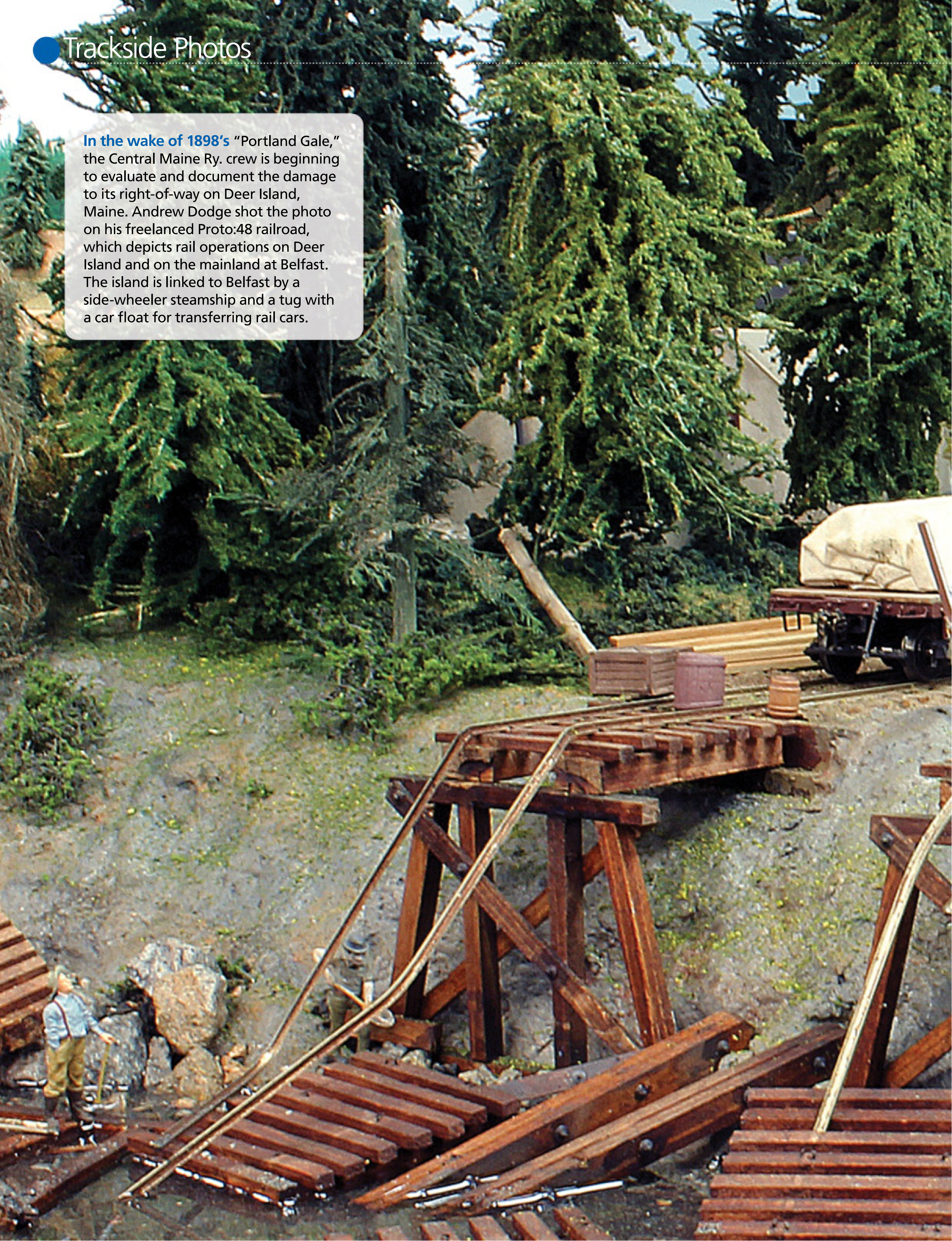
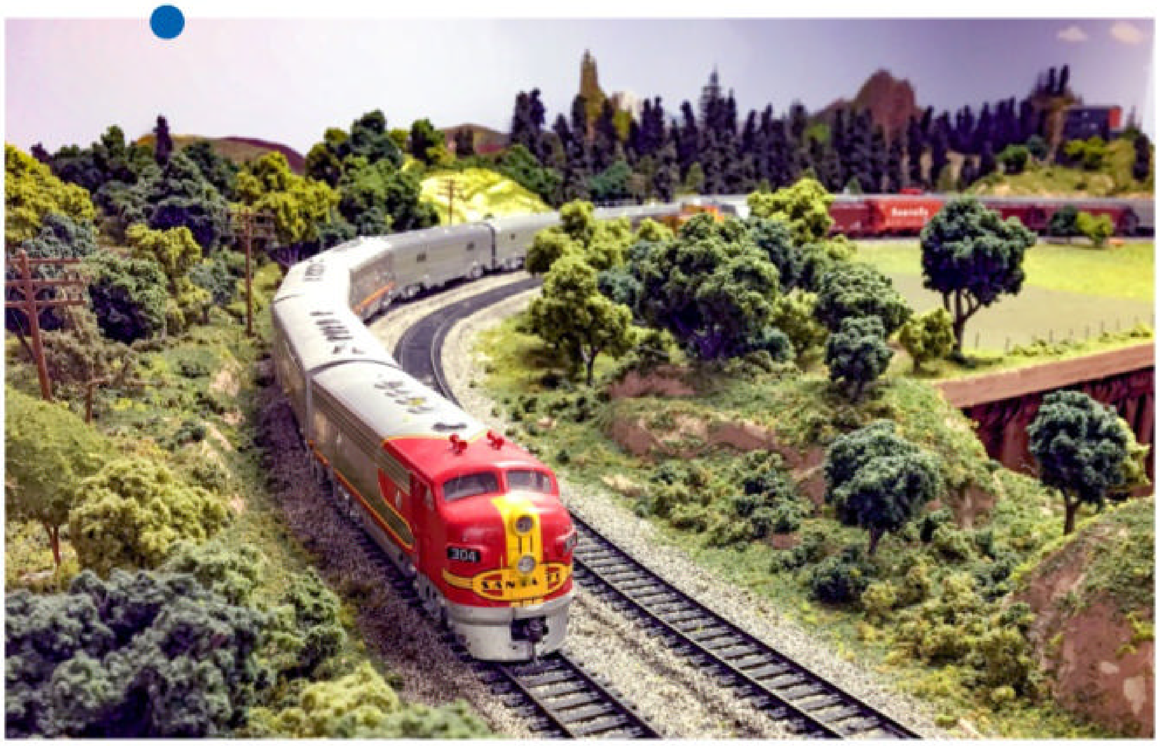


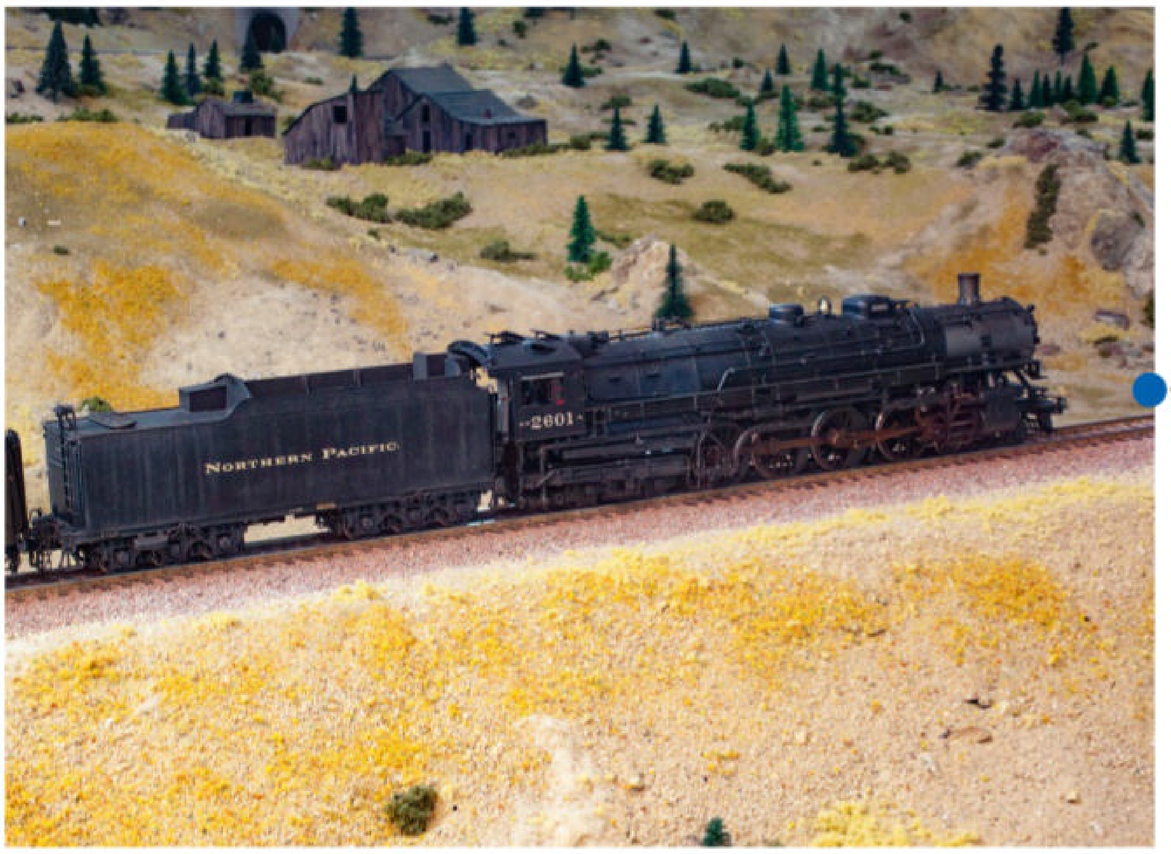
In the wake of 1898's "Portland Gale," the Central Maine Ry. crew is beginning to evaluate and document the damage to its right-of-way on Deer Island, Maine. Andrew Dodge shot the photo on his freelanced Proto:48 railroad, which depicts rail operations on Deer Island and on the mainland at Belfast. The island is linked to Belfast by a side-wheeler steamship and a tug with a car float for transferring rail cars.

Conducted by Steven Otte

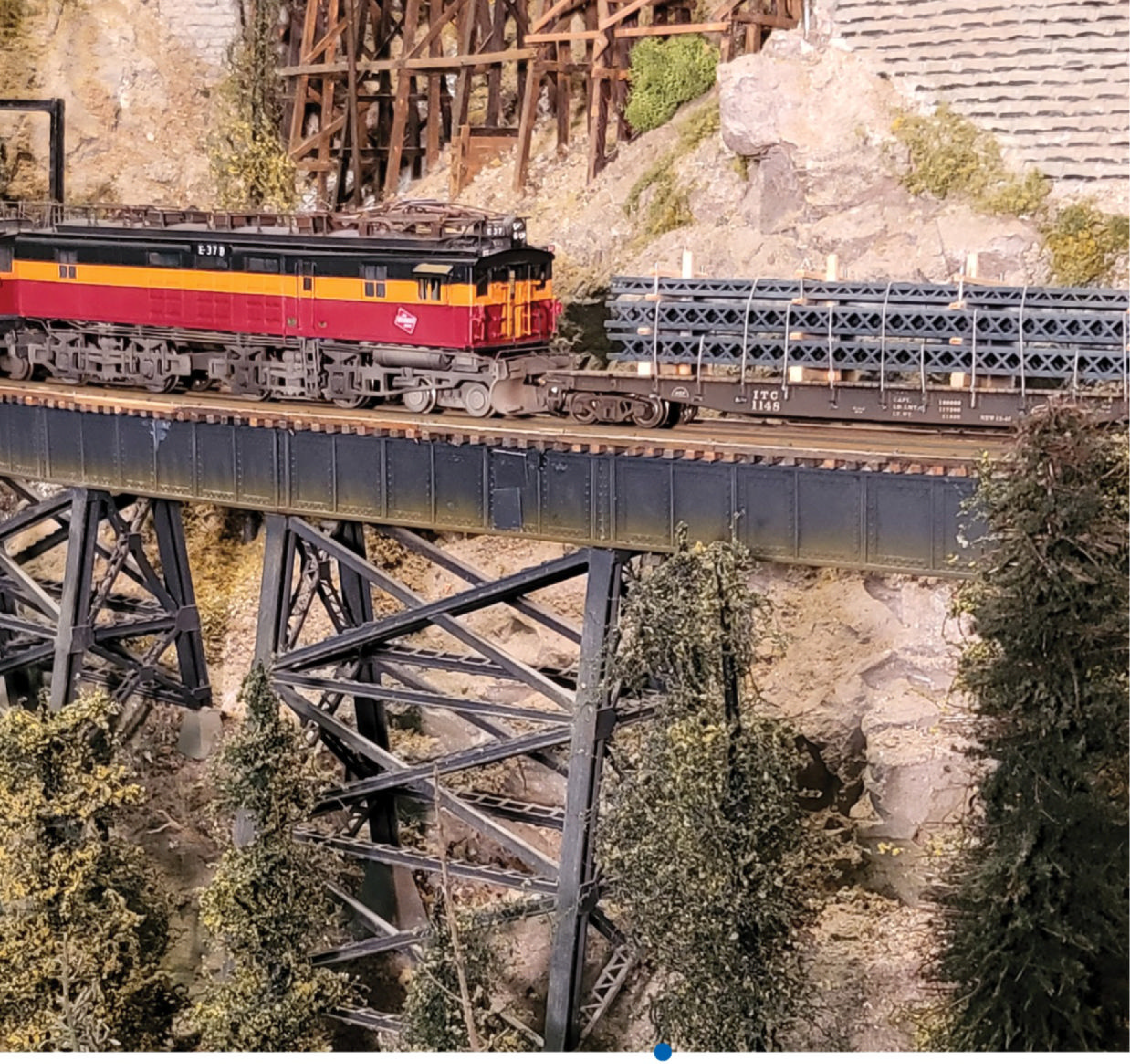
C.M.
05268
CENTRAL
05268
MAINE
C. M.
162

Atchison, Topeka & Santa Fe F unit No. 304 leads the *El Capitan* past a farm just outside a small Midwestern town. The train is making good time as it nears its destination of Union Station in the big city. Gerry Pedersen of Crest Hill, Ill., photographed the action on his unnamed, freelanced HO scale model railroad, which represents the Union Pacific and Santa Fe in the 1960s.





A railfan catches the *Mainstreeter* climbing Mullan Pass just west of Austin, Mont., in 1933. The train is led by Northern Pacific Class A 4-8-4 No. 2601, an HO scale W&R Enterprises brass model painted and weathered by Logan Thurman of Hamilton, Mont. Logan, whose business is ModelRailwayBackshop.com, shot the photo on the HO scale Mullan Pass layout built by Kirk Thompson of Stevensville, Mont.



Milwaukee Road EF-5 electric No. E37 is working today as a mid-train helper on the Swamp Creek & Western RR. John Dineen shot the photo on the layout belonging to the Swamp Creek & Western RR Association in Edmonds, Wash. John painted the Overland motors with custom-mixed paints, decaled, and weathered them. This may be the train's final run, since the Association lost its lease after 42 years in the suburban Seattle Amtrak station and soon the trestle will come down.

Send us your photos

Trackside Photos is a showcase for the work of *Model Railroader* readers. Send your photos (digital images 5 megapixels or larger) to: *Model Railroader*, Trackside Photos, P.O. Box 1612, Waukesha, WI 53187-1612; or upload them to fileupload.kalmbach.com/contribute. For our photo submission guidelines, contact senior associate editor Steven Otte at sotte@kalmbach.com.

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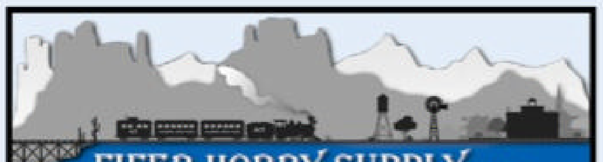

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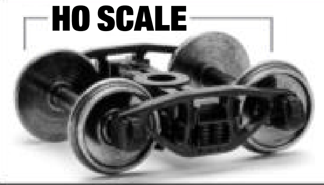

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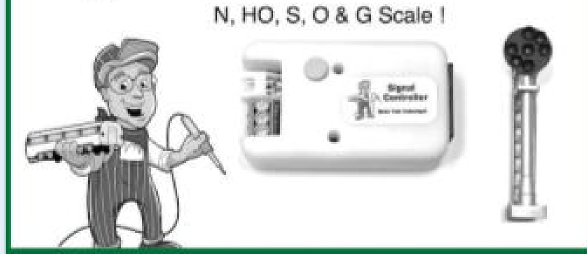

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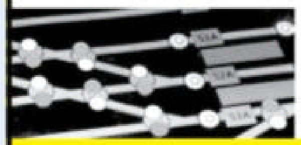

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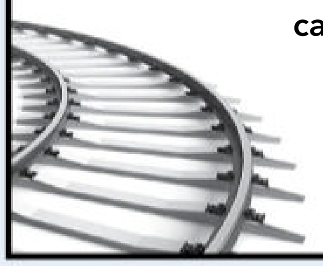

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Schedule of Events

AZ, GLENDALE: ARHS Model Train Swap Meet. Glendale Christian Church, 9661 North 59th Ave., Glendale, AZ 85302. Saturday, May 13, 2023, 9:00am-1:00pm. Everything Trains – Food – Fun. Admission $5.00. Tables $25.00 - to sign up send check or money order to: ARHS, PO Box 5816, Glendale, AZ 85312-5816. Contact: Craig Faris, 623-340-3529

CA, OCEANSIDE: North County Model Railroad Society Model Train Swap Meet and Club Layout Tour. Saturday, May 13, 2023, 8:00am-1:00pm, at Oceanside Heritage Park, 220 Peyri Dr., Oceanside, CA 92058. Door prizes for kids and Grand Prize Raffle. Food/Drinks available. Admission is free. Vendor space $10. Vendor registration, contact John Burrow at swapinfo@ncmrs.org

FL, BROOKSVILLE: Regal Railways presents Toy Trains & Hobby Show. Hernando Fairgrounds, 6436 Broad St., Brooksville, FL 34601. Saturday, May 20, 2023. 9:00am-2:00pm. Admission: $6.00 adults, children under 12 free. Vendors and operating layouts. Lunch items available. Contact: Joe at 727-244-1341 or visit: www.regalrailways.com for more information.

IL, COLLINSVILLE: 16th Annual St. Louis Railroad Prototype Modelers meet. Gateway Convention Center. July 28-29, 2023, Friday 9:00am-9:00pm and Saturday 9:00am-5:00pm. Admission: $35.00 for both days; $25.00 for Saturday only. For information, www.stlrpm.com or Contact: Lonnie Bathurst at bathurst@litchfieldil.com or 217-556-0314

IL, GALESBURG: 2023 Galesburg Train Show. June 24-25. Saturday 10am-4pm, Sunday 10am-2pm. Knox College, T. Fleming Fieldhouse, 199 East Knox Street. Admission $5, under 12 free. 400 tables of model trains, books, videos, t-shirts, memorabilia. 80+ vendors and exhibitors. Operating layouts. Tables: $30 each. Refreshments available. Handicap accessible. Show Directors: Greg Norris 309-335-2634, John Manderscheid 563-349-0134

IL, GREENVILLE: American Heritage Railroad Train Show @ American Farm Heritage Museum, 1395 Museum Ave., Greenville, IL 62246. I-70 @ IL Rt. 127 (Exit #45). Saturday, June 10, 2023, 10:00am-4:00pm. Admission: $5.00, under 12 FREE. Train ride with paid admission. Operating layouts. Dealers welcome, $15.00 per table. Contact Jim @ 217-825-6230.

MN, WOODBURY: Newport Model RR Club Train Flea Market. Woodbury High School, 2665 Woodlane Drive, Woodbury, MN 55125. Saturday, April 15, 2023, 9:00am-2:00pm. Admission $5.00. Club Address: Newport Train Club, PO Box 0061, St. Paul Park, MN 55071. Contact: Don, 763-257-5443

NC, RALEIGH: Neuse River Valley Model Railroad Club SPRING INTO TRAINS Annual Show. Kerr Scott Building, NC State Fairgrounds, 4825 Trinity Road. May 6-7, 9am-5pm. Admission: $10 (covers both days), children 12 and under admitted free with adult, $1 coupon off admission available on club website. Contact George Lasley, 919-757-4503, email: gwlasley52@gmail.com, visit: www.nrvclub.net

NY, DUNKIRK: TCA Upstate NY Chapter Toy Train Show. Dunkirk Fairgrounds, 1089 Central Ave., Dunkirk, NY 14048. Saturday, May 13, 2023. TCA Members: 8:30am. General Public: 9:00am-3:30pm. Admission: Chapter Members, free. General Public, $5.00, children 12-17, $3.00, under 12 free w/ paid adult. Tables are $20, for reservations email: tcaupstatechapter@gmail.com. Mike: 716-913-4195 or Dave: 716-208-5842

TN, JOHNSON CITY: BIG TRAIN SHOW, June 2-3, 2023. Host: George L. Carter Railroad Museum. 330+ tables, 64,000 sq.ft. All scales, operating layouts, vendors, memorabilia, books, food. ETSU "Mini-Dome" Noon-6pm Friday, 10am-4pm Saturday. Admission: $8 per day, under 12 Free. Free covered parking. Contact Roger Teinert 423-791-4937 or www.etsu.edu/railroad

TX, AUSTIN: Austin Train Show. Over 25,000 sq.ft. of railroading fun for the whole family! Palmer Events Center, 900 Barton Springs Road, Austin, TX. May 6-7, 2023. Saturday 10am-5pm, Sunday 10am-4pm. Admission: $8 online, $10 at the door (includes both days), 12 and under FREE w/adult. Vendors, model/Lego railroads, tour, clinics. For more information visit: austintrainshow.org

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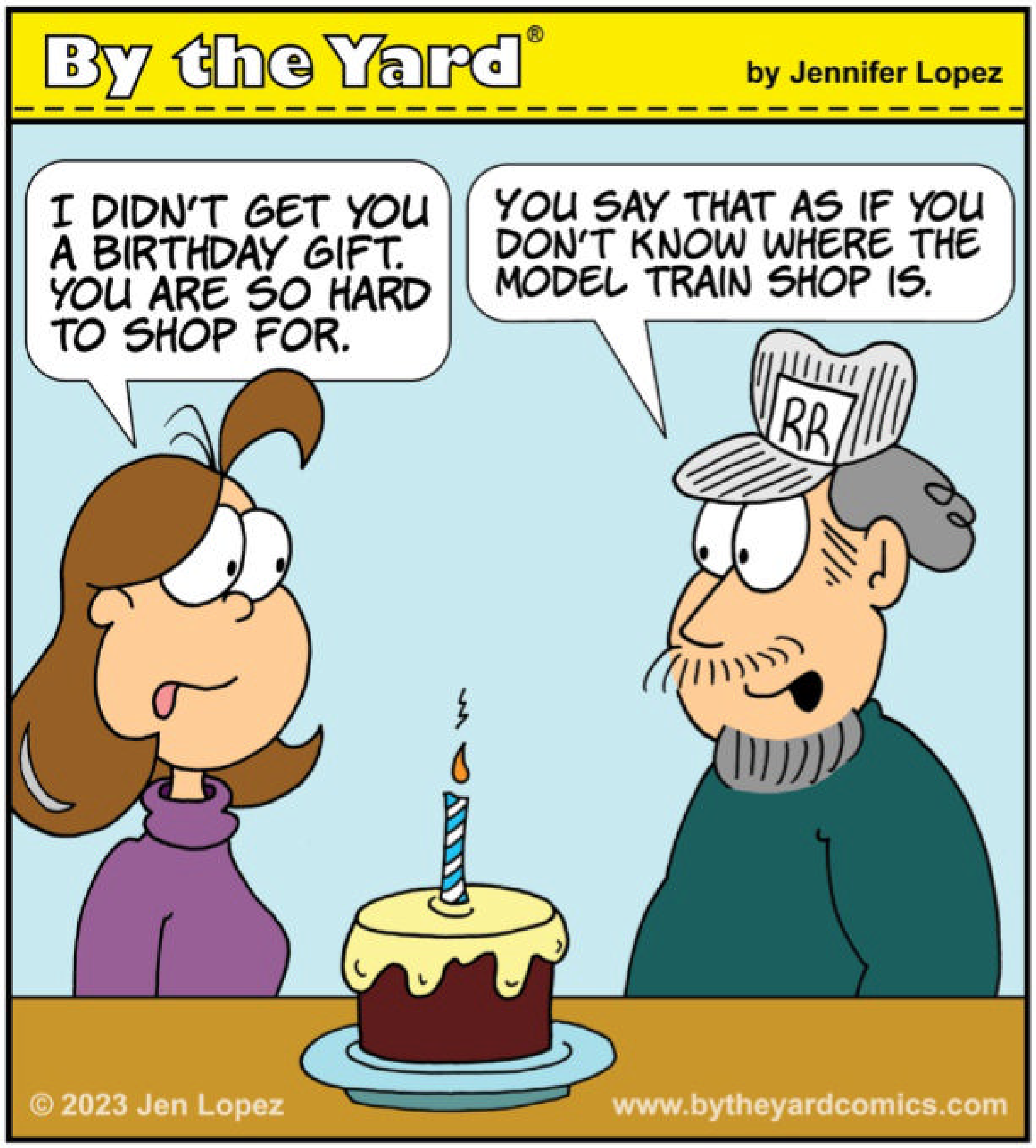
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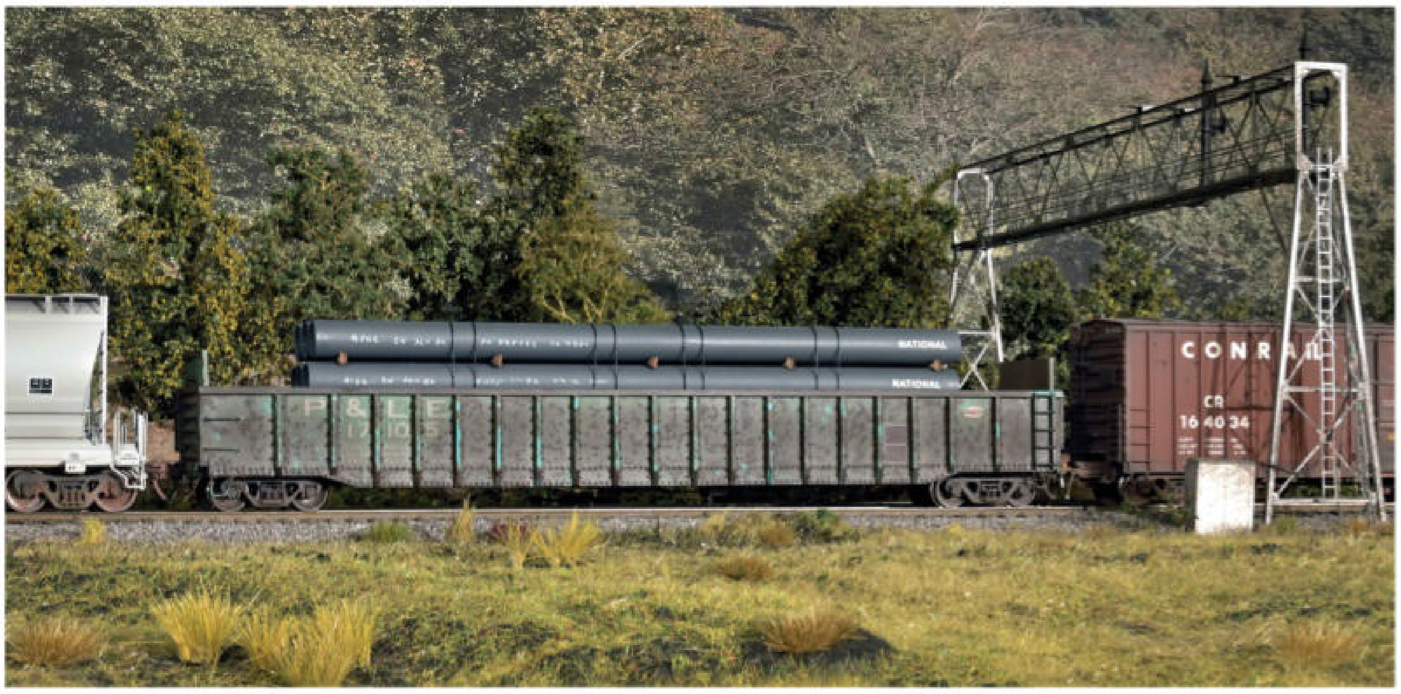


Model Railroader's On Operation columnist, Jerry Dziedzic, climbed in a time machine to venture out of his preferred 1947 modeling period to build this P&LE pipe gondola for Dave Abeles' HO Conrail railroad. It's an old Roller Bearing Models kit donated by Tim Moses, assembled and decorated by Jerry, and weathered by Lenny Harlos. Dave Abeles photo

You may have thought that MR chooses its columnists based on how difficult it is to pronounce our last names. Mine isn't that hard: "Custer," like the general. The fellow who lives down the road from me and writes MR's On Operation column, Jerry Dziedzic, has a last name that's a little more challenging. But it's really easy once you get the hang of it: "Deed-zik."

Jerry's been a good friend for longer than I can remember. He's a retired chemical engineer and executive who spends his winters with his wife, Laura, as a ski instructor in the Rockies and manages to be a good citizen by being actively involved in the civic affairs of Breckenridge, Colo. Moreover, he's a qualified steam locomotive engineer at Steamtown in Scranton, Pa. I get tired just thinking about all that responsibility.

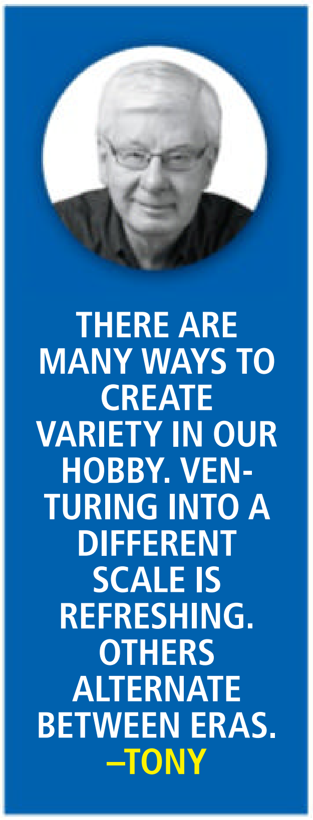
But wait – there's more! As Jerry recently pointed out, I know him best as a "narrow-minded purist who adheres to a 1947 target year with rare exceptions" for his HO scale New York, Susquehanna & Western. But even when it comes to modeling, he has his fingers in several pies.

"I'm as fond of building resin kits as anything else in the hobby," he told me. "I began building cars for friends a couple of years ago after I worked through my personal stash. Imagine the feeling when I crack open a bottle of Scalecoat Penn Central Green for a pair of Greenville pipe gons for Dave Abeles [see photo] or a trio of Paul Tupaczewski's X58s. Later today, I'll finish what few details remain on a Pittsburgh & Lake Erie hot-coil car for Jim Homoki.

"But tackling such 'modern' projects makes me tentative," Jerry admits, "because I haven't accumulated the prototype resources I rely on for my own period. Being provided extensive photo coverage overcomes this. These projects take me down memory lane to my most active railfanning days, now 25 years past, with first-hand recollections of this equipment."

He concluded our brief chat by observing that there are many ways to create variety in our hobby and thus avoid burnout. Venturing into a different scale, as I have written about, is refreshing. Others alternate between steam and diesel eras.

My neighbor Perry Squier has spent the past year or so scratchbuilding structures for Tom Schmieder's basement-size HO Delaware, Lackawanna & Western. There is no way that railroad is going to be ready for operation any time soon, let alone have structures on it to identify key locations and functions, without a little help from his friends. Perry's circa 1923 Pittsburg, Shawmut & Northern is sufficiently complete for him to feel comfortable doing something different for a good friend. He'll enjoy the fruits of his labors when Tom's DL&W comes online.



THERE ARE MANY WAYS TO CREATE VARIETY IN OUR HOBBY. VENTURING INTO A DIFFERENT SCALE IS REFRESHING. OTHERS ALTERNATE BETWEEN ERAS.
–TONY

Several structures on my railroad, notably the L-shaped depot at Linden, Ind., and the V-shaped depot at Metcalf, Ill., are the works of good friends – Frank Hodina and Randy Laframboise, respectively – who offered to help with nary a hint of arm-twisting on my part. Quite a few freight cars are also the work of friends.

My contributions in this regard are perhaps remiss, but I did build a large-scale project railroad for a series in MR and followed that up with an O scale project layout. Additionally, several structures from the Allegheny Midland now populate local railroads.

The real point we're discussing here is to model something of absolutely no personal value to ourselves just for the sheer joy of building the model and knowing that another modeler will share in that enjoyment when it's complete. A subset of this train of thought is to build a model in another scale, era, gauge, or media and enter it in a National Model Railroad Association contest or display it at a Railroad Prototype Modeler's conference. Bill Darnaby did that with a beautiful O scale model of an Indiana RR interurban car.

In short, follow the Monty Python mantra: "And now for something completely different." MR

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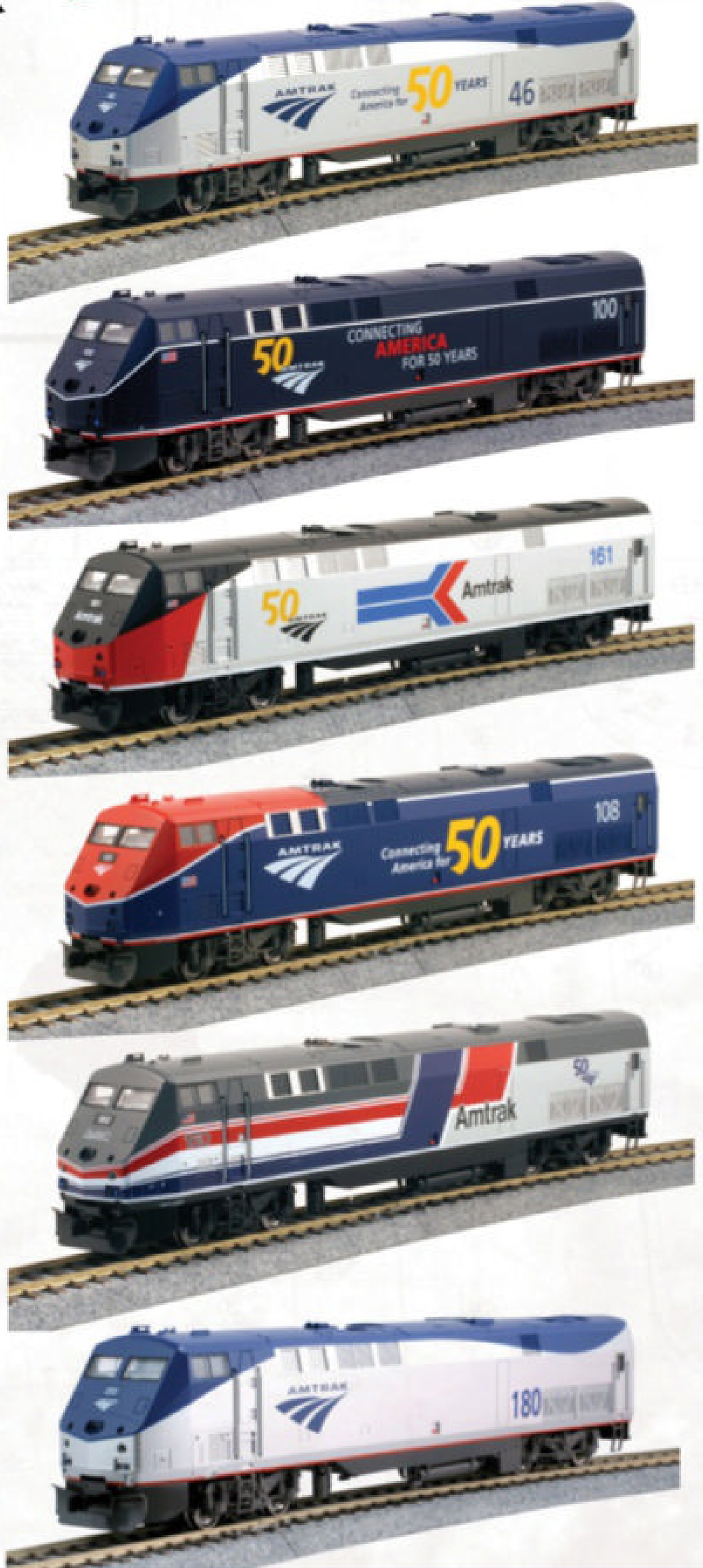
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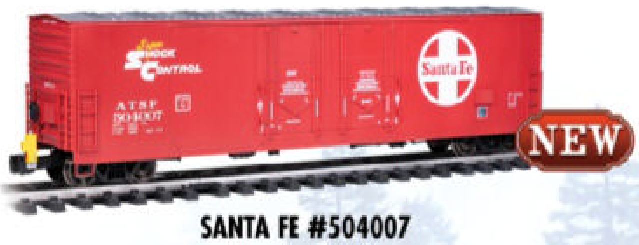

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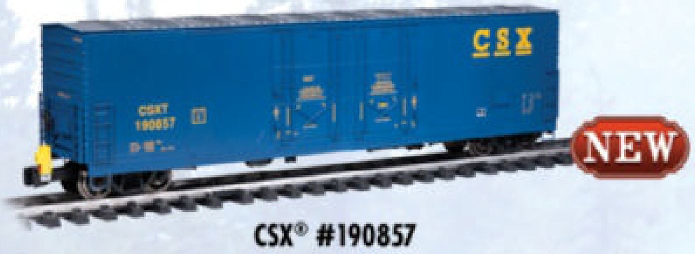

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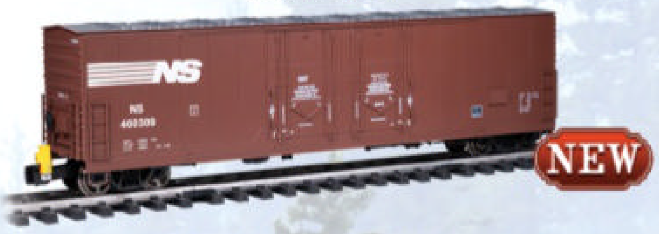

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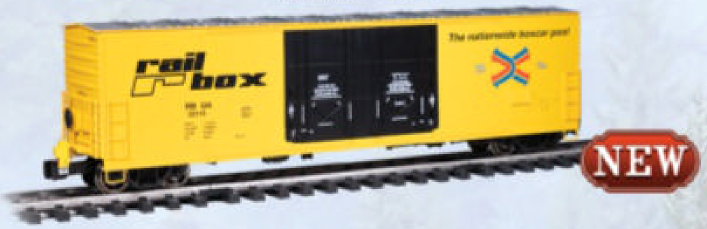

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